

PATTON, BOGGS & BLOW  
2550 M STREET, N.W.  
WASHINGTON, D.C. 20037  
(202) 457-6000

EPA REGION IV  
ATLANTA, GA

TRT TELEX: 197780  
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WRITER'S DIRECT DIAL

(202) 457-5282

Mar 26 1 33 PM '93

March 25, 1993

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BY FEDERAL EXPRESS

Peter Raack, Esq.  
Assistant Regional Counsel  
United States Environmental  
Protection Agency  
Region IV  
345 Courtland Street N.E.  
Atlanta, GA 30365

Re: Carrier Air Conditioning Site, Collierville, TN

Dear Mr. Raack:

Please make this letter a part of the Administrative Record for the above-referenced site, as it contains Carrier Corporation's further response to three aspects of the EPA Unilateral Administrative Order (UAO), issued to Carrier Corporation, and dated February 11, 1993. These responses concern:

(1) the financial assurance provision, section XXIII.A. of the UAO. Though Carrier continues to reserve its legal position for reasons stated in my February 26, 1993 letter about this subject, it is providing additional information to EPA in the form of the recently-printed United Technologies Corporation 1992 Annual Report, together with an analysis of the pertinent provisions;

(2) an insurance certificate from Carrier concerning the policy limits for comprehensive general liability and automobile insurance, as provided by section XXIII.B of the UAO; and

(3) a copy of the notice concerning the property which has been recorded against the Carrier property, pursuant to section II.C. of the UAO.

A more detailed discussion of each of these items follows.



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I. Financial Assurance.

For reasons stated in prior correspondence, Carrier views EPA's legal position concerning financial assurance requirements as incorrect. However, as an accommodation to EPA, Carrier is providing a copy of the most recent annual report of United Technologies Corporation, for calendar year 1992 (the "1992 Annual Report").

United Technologies is one of the largest manufacturing companies in the United States, and ranks in the Fortune 50. It had sales in 1992 of \$21,641,000,000.00. 1992 Annual Report, p. 5. This annual report is prepared in order to satisfy the stringent financial and accounting standards imposed on publicly-traded companies by the U.S. Securities and Exchange Commission.

As you are aware, Carrier is a wholly-owned subsidiary of UTC, and has its financial results combined with other UTC subsidiaries and divisions in this report. Carrier is the largest manufacturer in the world of heating, ventilating, and air conditioning (HVAC) equipment. 1991 Annual Report, p. 7. In this capacity, Carrier had sales in 1991 of \$3.8 billion (Id., p. 24), a figure which increased to \$4.3 billion in 1992. 1992 Annual Report, p. 20. In 1992, Carrier accounted for 49% of the revenues of the building systems sector of UTC, up from 47% in 1991. Id.

Building system operating profits increased \$138 million in 1992, which is a 42% increase over 1991. 1992 Annual Report, p. 22.

The 1992 increase is primarily a result of increased air conditioning business volume, most notably in the North American region and the transportation refrigeration business, as well as a more profitable mix of sales.

Id. (emphasis supplied).

As noted in my February 26, 1993 letter to you concerning financial assurance, Carrier has invested heavily in research and development to accommodate the changeover in air conditioning equipment from CFC's to non-CFC's. 1991 Annual Report, p. 17. Carrier invested another \$125 million in technology development in 1992; 1992 Annual Report, p. 12. As a result of these investments, Carrier appears to be materially ahead of its competitors in compressor technology as a result. Id. Thus in

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1992, Carrier opened a scroll compressor manufacturing facility in Arkansas, and expects to be producing 750,000 scroll compressor units by 1994. Id.

These models tend to be smaller than earlier models, are easier and less costly to manufacture, and take up less space when installed.

That strategy of miniaturizing its products has been paying off. Carrier significantly increased sales and profits in the North American residential marketplace in 1992, largely as a result of strong customer acceptance of its new, compact Cobra line of condensing units for air conditioning systems.

Id.

Carrier reduced its overhead substantially by closing several U.S. plants in 1991, including one in Knoxville, Tennessee, as well as several overseas plants. 1991 Annual Report, p. 23. These efforts resulted in increased productivity, reduced floor-space requirements, reduced work-force levels, and reduced work-in-process inventory. 1992 Annual Report, p. 7. Put simply, in 1992 Carrier produced more but used fewer workers and plants to do so. Id.

UTC addressed environmental remediation activities and costs in detail in 1991, taking a \$256 million pre-tax charge in the fourth quarter to reflect such costs. 1991 Annual Report, p. 23. The 1992 annual report discusses environmental matters further, reporting the expenditure for remediation activities of \$82 million in 1992, of \$57 million in 1991, and of \$48 million in 1990. 1992 Annual Report, p. 25. These expenditures are expected to range between \$100 million and \$150 million in each of the next two years. Id. The 1992 Annual Report goes on to state that:

The nature of the above matters makes it difficult to estimate the exact timing and ultimate amount of future environmental expenditures. Also, the Corporation has instituted legal proceedings against its insurers asserting insurance coverage for remediation and related expenditures. These proceedings are expected to take several years. No prediction can be made as to the outcome of these proceedings. The above uncertainties notwithstanding, the Corporation believes that expenditures

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necessary to comply with present regulations governing environmental protection will not have a material effect upon its capital expenditures, competitive position, financial position or results of operation.

Id. (emphasis supplied). The report goes on to state that UTC is a PRP at 79 Federal Superfund sites, many of which relate to formerly-owned businesses.

The Corporation's share of future remediation and related expenditures at these sites is estimated to be in the range of \$100 - \$150 million and adequate reserves have been established. In addition, the Corporation has [also] adequately provided for its share of future remediation and related expenditures at other known sites for which it may have some remediation responsibility.

Id., p. 25. (emphasis supplied).

The accounting principles for these estimates are stated in note 1 to the financial statement:

Environmental Activities: Provisions for environmental remediation activities are recorded when assessments are made, remedial efforts are probable and related amounts can be reasonably estimated; potential insurance reimbursements are not recorded. The Corporation periodically assesses its environmental liabilities through reviews of contractual commitments, site assessments, feasibility studies and formal remedial design and action plans.

Id., p. 32 (emphasis supplied). Thus, the outcome of Carrier's pending insurance litigation can have no adverse effect on the figures shown in the annual report, and the statements based on them about Carrier's financial capacity to carry out the remedial work at the Collierville site.

Carrier believes that this financial information should be adequate to assure EPA and others that there is no realistic basis for concern that Carrier will be financially unable to perform the remedial work specified in the Record of Decision (ROD). That work, estimated by the ROD to cost between \$5.7 million and \$7.9 million is less than 2/10 of one percent of Carrier's 1992 revenues of \$4.3 billion. In addition, much of this work has already been completed, including the installation of the treatment system at the City of Collierville wells (at



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Carrier's expense) and the soil vapor extraction (SVE) system in the north lagoon area. This leaves substantially less than \$7.9 million in work left to be done, and much of this is long-term operation and maintenance over as much as twenty years time. It seems evident that EPA has little concern about Carrier's ability to perform this work; otherwise EPA would have issued an order to the City of Collierville as well as to Carrier, something EPA did not do here.

We believe that this information should be satisfactory to EPA under any reasonable construction of the term "financial assurance". If, however, you should have questions about this matter, or desire specific additional information, please let me know.

### II. Insurance Certificate.

Pursuant to section XXIII.B. of the UAO, Carrier is submitting for the Administrative Record a certificate of insurance showing its comprehensive general liability and auto insurance coverage for the site to be \$1,000,000, combined single limit. As we discussed at our meeting in Atlanta last month, this certificate satisfies the requirements of the UAO concerning Carrier's insurance. Please place the original certificate, which shows EPA as the certificate holder, into the Administrative Record. As noted in prior correspondence, Carrier is reserving its legal position on this issue, specifically that EPA does not have the authority under section 106 of CERCLA to require such insurance coverage, or statements about it.

### III. Recording of Notice of Pendency of UAO.

Pursuant to section II.C. of the UAO, Carrier has undertaken to record notice of the UAO with respect to its property, the 135 acre tract which corresponds to the National Priority List definition of the site. We are informed by local counsel that in order to record documents in the title records, the signatures must be notarized. As the Regional Administrator's signature on the UAO is not original and is not notarized, the UAO as presented to Carrier is not in a form which can be recorded in the title records.

Carrier has nonetheless recorded notice of the UAO in the form enclosed with this letter. We have enclosed a notarized copy of that form, which was recorded on March 10 in the appropriate land records. Like a lis pendens which might be

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filed against real estate to place other parties on notice of litigation affecting the title-holder of real property, this notice informs anyone reviewing the title records of the UAO, the authority under which the UAO was issued, the agency office issuing it, the docket number, and the location where it can be obtained. Please place this original document in the Administrative Record for this site.

For reasons stated in prior correspondence, Carrier does not believe EPA has the authority under CERCLA to require the recording of anything concerning the property, much less a 44 page order (with voluminous attachments) incomprehensible to the ordinary citizen or ordinary real estate practitioner. Nonetheless, Carrier has sought to accommodate EPA by filing this notice in a form acceptable to the register of deeds, and understandable by the ordinary citizen.

I hope the information and documents transmitted with this letter are satisfactory and understandable. Please call if you should have any questions. Thank you for your courtesy in this matter.

Sincerely,



Patton, Boggs & Blow  
Counsel to Carrier Corporation  
By Russell V. Randle

Enclosures: (1) 1992 UTC Annual Report  
(2) Insurance Certificate  
(3) Recorded Notice of Unilateral  
Administrative Order

cc: Ms. Beth Brown, RPM

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NOTICE OF UNILATERAL ADMINISTRATIVE ORDER  
UNDER SECTION 106(a) OF THE  
COMPREHENSIVE ENVIRONMENTAL RESPONSE, COMPENSATION AND LIABILITY  
ACT (CERCLA) 42 U.S.C. SECTION 9606 (a)

Carrier Corporation, Collierville, Tennessee does hereby acknowledge and give notice that a Unilateral Administrative Order for Remedial Design and Remedial Action (hereinafter "Unilateral Order") was issued to it on 11 February 1993 by:

Joseph R. Franzmathes, Director  
Waste Management Division  
Environmental Protection Agency, Region IV  
345 Courtland Street, NE  
Atlanta, Georgia 30365

pursuant to Section 106(a) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 as amended by the Superfund Amendments and Reorganization Act of 1986, (42 U.S.C. 9606(a) (1990)). The order has U.S. EPA docket number 93-06-C. This order applies to Carrier Corporation and its facility located at:

97 Byhalia Road  
Collierville, Tennessee

being property owned by Carrier Corporation and as recorded in AE 7483 and AE 7396 in the Register's Office of Shelby County, Tennessee.

The Complete Unilateral Order may be obtained at the offices of Carrier Corporation located at:

97 Byhalia Road  
Collierville, Tennessee

The Order may also be obtained from the Administrative Record about this site maintained by the Region IV offices of the U.S. EPA at:

DK 1705

345 Courtland Street, NE  
Atlanta, Georgia 30365

It is the purpose of this document to incorporate and make reference, and to put on notice, any and all persons as are contemplated by the terms and conditions of the Unilateral Order.

This 10 day of March 1993.

Carrier Corporation

by: Roscoe A. Feild Attorney

[ Roscoe A. Feild ]  
Attorney for  
Carrier Corporation

SWORN TO AND SUBSCRIBED to me this 10th day of March 1993.

Roscoe A. Feild  
Notary Public

NOTARY PUBLIC  
SHELBY COUNTY, TN  
Commission expires: 8/30/94

SHELBY COUNTY  
REGISTER OF DEEDS

93 MAR 10 PM 3:31

DK 1705

CARRIER.ORD

DK 1705	
No.	
D/C	<u>6</u> DR# <u>25</u>
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Val.	
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RECORDING FEE	<u>800</u>
WT <input type="checkbox"/> MISC FEE	<u>200</u>
TOTAL	<u>1000</u>
STATE OF TENNESSEE SHELBY COUNTY GUY D. BATES - REGISTER	





**United Technologies provides a broad range of high-technology products and support services to customers in the aerospace, building and automotive industries worldwide. UTC's best-known products include Pratt & Whitney aircraft engines, Otis elevators and escalators, Carrier heating and air conditioning systems, Sikorsky helicopters, Hamilton Standard aerospace systems, Norden defense systems, and UT Automotive components and systems. The corporation also supplies equipment and services for the U.S. space program.**

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On the cover: The Otis Shuttle people-mover system at the New Tokyo International Airport in Narita, Japan, has been working flawlessly since operation began in December. The four 150-passenger cars, which are propelled by an elevator-type drive machine on a cushion of air, can carry 9,000 travelers each hour through the terminal complex. The airport is an international gateway to the Asia-Pacific region, which is one of the largest and fastest growing markets for Otis, Pratt & Whitney, Carrier, and other UTC companies.

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# Reshaping UTC

**United Technologies is becoming leaner, tougher and more competitive as it adjusts to altered market conditions worldwide.**

United Technologies is undertaking a profound transformation that affects how we manage our businesses as a result of the prolonged downturn in the global economy. To improve our competitiveness and profitability, we announced details of a major restructuring process and a cost reduction program in January 1992 that will eliminate more than \$1 billion in annual operating expenses by the end of 1994 and reshape UTC into a leaner, tougher, more productive organization. We are on track with those efforts and remain confident that we will achieve our goals.

## **Operating Performance Improved Overall**

Cost savings achieved in 1992 as a result of the corporation's restructuring actions contributed significantly to UTC's overall performance. Operating results improved in all segments of the corporation except the Power segment, which suffered a loss of approximately \$300 million, largely due to the continuing crisis in the airline industry and the charges described below.

Many airlines, experiencing some of their biggest financial losses ever, reduced orders for engine spare parts, while the airframe builders cut back production sharply due to order cancellations and deferments. In response, we have accelerated and expanded our restructuring efforts at Pratt & Whitney to size that business to what we see as a permanently smaller aircraft engine market going forward.

We took a \$85 million pretax charge in the fourth quarter for additional, volume-related restructuring actions. Some \$70 million of that amount covered added costs to bring Pratt & Whitney's total workforce below 30,000 by the end of 1994, compared with 41,000 at year-end 1992. Additional charges

taken in the fourth quarter also included \$447 million for credit and other exposures related to our relationships with the airline industry, as well as \$169 million for contract-related matters. In the aggregate, these fourth-quarter charges reduced earnings by \$3.27 per share.

The adoption in the fourth quarter of 1992 of new accounting standards for postretirement employee benefits and for income tax accounting contributed significantly to the corporation's net loss for 1992 of \$287 million, or \$2.67 per share. The cumulative effect of adopting these standards was a charge to income of \$2.62 per share. In addition, the adoption of these two standards had the effect of reducing earnings before the cumulative effect of the changes in accounting principles by 38 cents per share.

## **Planning for the Long-Term Future**

From the outset, we have viewed our restructuring program as a blueprint. The process we are now going through is intended not as a quick solution to short-term problems, but rather a carefully crafted plan for building UTC's long-term future as a globally competitive corporation.

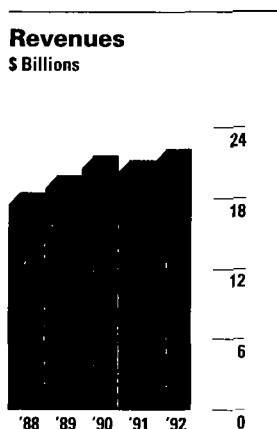
The results thus far speak for themselves:

Total restructuring savings for 1992 amounted to \$419 million, which is precisely according to plan.

Our restructuring efforts eliminated 2.8 million square feet of unneeded space at facilities worldwide, which is 500,000 square feet ahead of plan.

We also eliminated 10,926 positions in 1992 as a result of restructuring, bringing total workforce reductions to 13,026, which is 4,100 ahead of plan. But with additional reductions now planned, primarily at Pratt & Whitney, the new target is 26,090 by 1995, nearly double what was planned earlier.

These workforce reductions are a regrettable but necessary step to ensure Pratt's health and future







**Robert F. Daniell, Chairman and Chief Executive Officer (right), and George David, President and Chief Operating Officer, constitute UTC's Office of the Chief Executive.**

success as a leader in the aerospace industry. Pratt & Whitney has a long and proud heritage and is properly characterized as a national asset. We will take the steps necessary to maintain Pratt's strength and competitiveness in the global market.

What is taking place throughout the corporation today is a continuous improvement process that already has given us up to 40 percent manufacturing space reductions in some of our plants, along with a doubling or tripling of inventory turns, and productivity gains of 20 percent or more.

The year 1992 saw many other accomplishments at UTC, some measured in contracts won and dollars earned, and some in our successes in meeting our responsibilities to employees, our customers and the communities in which we do business worldwide.

Sikorsky's outstanding performance, for example, included a \$1.5 billion contract with the U.S. Army for 300 BLACK HAWK helicopters, the company's largest single contract ever. It is also Sikorsky's fourth consec-

utive multi-year BLACK HAWK contract and brings the total number of these aircraft delivered and on order to the Army to more than 1,400. In addition, the Turkish government awarded Sikorsky its largest foreign contract, a BLACK HAWK order valued at more than \$1 billion.

In spite of a difficult year, Pratt & Whitney managed to increase its share of new orders for large commercial engines to 48 percent, reflecting the satisfaction of both existing customers and customers Pratt has won from competitors.

On the military side, Pratt & Whitney was selected to supply Taiwan with \$500 million worth of F100-PW-220 engines for F-16A/B fighter jets, and it is competing for another order worth approximately \$600 million for engines to power F-15s for Saudi Arabia. International orders are especially significant because they extend Pratt's existing military engine production in the face of U.S. defense budget cuts and maintain its readiness to produce F119 engines for the F-22 advanced tactical fighter later in the decade.

Otis' service business in 1992 showed increased strength that more than offset declines in new construction activity in North America and other mature markets. Otis now has more than 730,000 elevator units under service contract worldwide, an increase of more than a quarter million units in the past decade.

Carrier's long-term and substantial investments in new air conditioning and heating products are paying off, resulting this year, for example, in a larger share of the North American residential market.

Among other issues affecting United Technologies, we have seen meaningful results from the corporation-wide environmental initiatives begun in late 1990. In 1992, UTC reported to the U.S. Environmental Protection Agency a decrease of nearly 50 percent, or about 5.36 million pounds, in noxious air emissions, compared to the 1988 base year.

In addition, specialized environmental training was provided to more than 500 line managers, environmental professionals and technicians as part of a continuing process of reinforcing responsibilities for environmental compliance at all levels of the corporation. This training is now being extended to our non-U.S. companies.

We have increased our training and awareness efforts to reinforce our commitments to the highest standards of ethics and business practices. We have also launched employee training sessions to instill an appreciation of workforce diversity and to create a business environment free from harassment of any sort.

Workforce diversity remains one of our greatest challenges, but we were pleased when our efforts to date were recognized in 1992 by the Exemplary Volunteer Efforts (EVE) Award, presented by the U.S. Department of Labor for innovative programs to increase employment opportunities for women, minorities, the disabled and Vietnam-era veterans.

#### **Focus: Productivity, Technology, Globalization**

As you read this annual report, you will find we are focusing on three topics that are fundamental to UTC's success and that demonstrate our continuing commitment to shareowner value.

One is productivity improvement, to which we continue to apply emphasis and new initiatives. Active participation by employees in every aspect of our operations, from engineering through manufacturing and marketing, is a key to improving the ways in which we do business. These improvements, in turn, support our achieving a return on equity that would position UTC in the upper quartile of the S&P Industrials.

Technology development is the second focus of this year's report, simply because technology is the founda-

tion on which we build our future accomplishments. Market leadership builds ultimately on technology preeminence.

Research and development investments remain high, in spite of an exceptionally difficult economic climate, to ensure that we will be ready with the products and processes that will earn us clear competitive advantage. In 1992, our company-funded R&D was more than \$1.2 billion. Looking ahead, we anticipate a decline in R&D spending in the next few years, not due to any lack of commitment, but because of the maturity of two major Pratt & Whitney development programs for the PW4168 and PW4084 growth engines.

Globalization is the third priority, with international business now accounting for 55 percent of total UTC revenues. In 1992, we broadened and strengthened many international collaborations, forming a strategic foundation for the business successes of tomorrow.

The past year challenged us in many respects. While we are pleased with our restructuring progress and other accomplishments, we will not be satisfied with our efforts until we achieve the financial performance that you, our shareowners, expect and require.

*Robert F. Daniell*

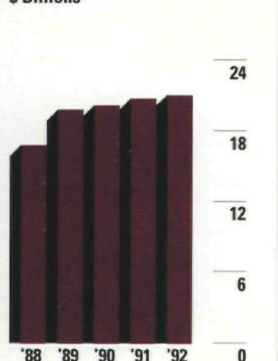
Robert F. Daniell  
Chairman and Chief Executive Officer

*George David*

George David  
President and Chief Operating Officer

February 12, 1993

**Backlog**  
\$ Billions





# Financial Summary

In Millions of Dollars (except per share amounts)

	1992	1991
<b>UTC's Performance In Brief</b>		
Sales	<b>\$21,641</b>	\$20,840
Net loss	<b>(287)</b>	(1,021)
Loss per share:		
Primary	<b>(2.67)</b>	(8.91)
Fully diluted	<b>(2.67)</b>	(8.91)
Dividends per common share	<b>1.80</b>	1.80
Business backlog	<b>21,175</b>	20,700
Research and development	<b>1,219</b>	1,140
Capital expenditures	<b>920</b>	1,048

December 31,

	1992	1991
<b>Other Financial Information</b>		
<b>Assets</b>		
Current assets	<b>\$ 8,101</b>	\$ 8,931
Fixed assets-net	<b>4,602</b>	4,607
Other	<b>3,225</b>	2,447
<b>Liabilities</b>		
Current liabilities, excluding debt	<b>6,249</b>	6,087
Total debt	<b>3,146</b>	3,393
Other	<b>3,163</b>	2,544
<b>Shareowners' equity</b>	<b>3,370</b>	3,961

For Pratt and Whitney, backlog is based on the terms of firm orders received and does not include discounts granted directly to airline and other customers.





A fundamental shift from mass production to lean production methods has helped Sikorsky significantly reduce its inventory requirements and improve its operating profits.



# Working Smarter

**Continuous improvement, inventory control and integrated product development are driving operating costs down and enhancing returns.**

Kaizen, kanban, JIT, zero defects, rapid prototyping, reduced cycle times. United Technologies has been adopting these productivity initiatives in the workplace as an integral part of restructuring in order to improve its design, engineering and production processes and gain a cost advantage in the marketplace.

## **Carrier at the Leading Edge of Improvements**

Carrier has been at the forefront of UTC's process changes. Through the application of continuous improvement methods, the company has been eliminating specialized shops within its facilities and is moving away from batch processing to what is known as lean production and integrated flow lines. As a result, assembly lines for its heating and air conditioning products are being radically reconfigured and shortened, with empowered employees grouped in teams, and parts and tools positioned close to where they are needed most.

By applying these productivity improvements to specific manufacturing processes, Carrier has been able to cut floor space requirements by one-third, workforce levels by 20 percent, and work-in-process inventory by more than one-half for those processes since 1988. As a result, there has been steady improvement in working capital turnover.

Floor space reductions achieved through lean manufacturing methods allowed Carrier to consolidate and close several facilities in 1992, while maintaining or increasing production volumes with fewer workers. At its plant in Indianapolis, Indiana, for example, Carrier was able to increase manufacturing output by 16 percent, trim work-in-process inventory by 64 per-



**Lean manufacturing initiatives enabled Carrier to boost production by 16 percent, slash work-in-process inventory by**

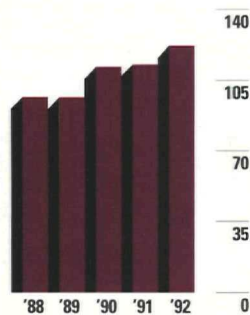
**64 percent and free up 150,000 square feet of floor space at its facility in Indianapolis, Indiana, in 1992.**

cent, and free up 150,000 square feet of floor space. The new space availability there allowed the company to transfer operations from its plant in Knoxville, Tennessee, which was closed as part of restructuring.

## **Time and Space Compression Nets Results**

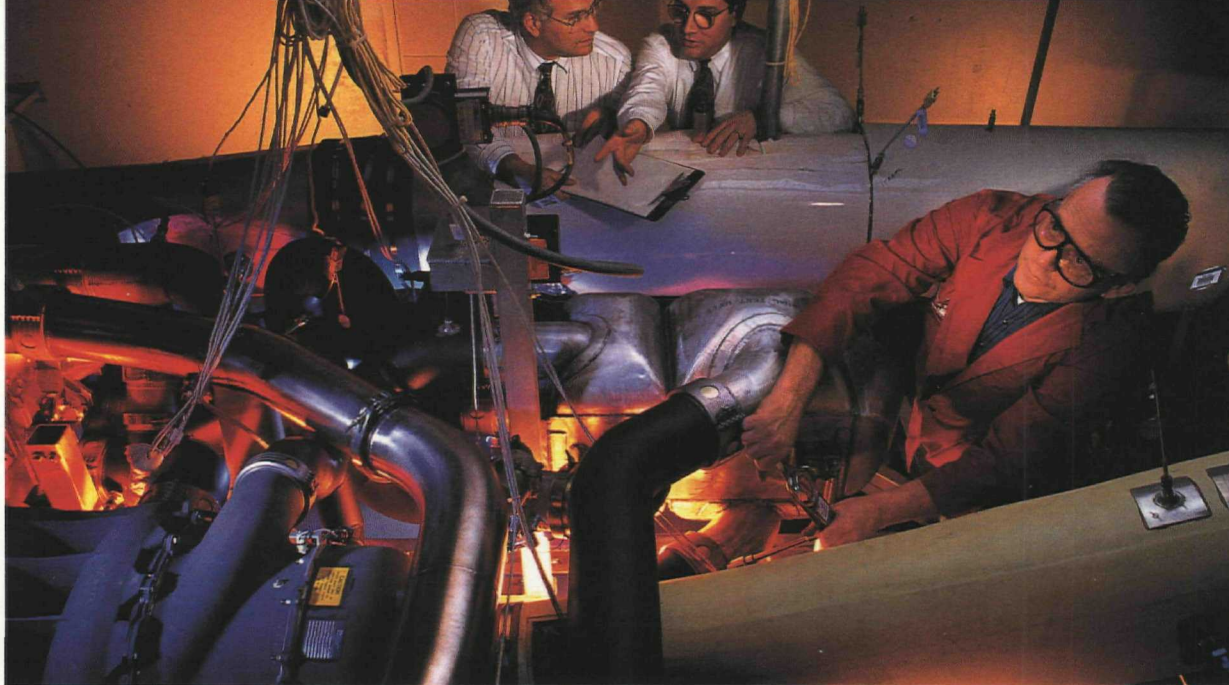
Manufacturing process improvements are being introduced across the corporation. Under the direction of UTC's Manufacturing Council, a major training program for employees at various plant locations was begun in 1992. The program consists of a two-week session at each facility to introduce concepts such as lean production and the kanban method of replenish-

**Sales per Employee**  
\$ Thousands





Hamilton Standard developed the world's largest air cycle machine, which is part of the system that will control cabin temperature in the Boeing 777 and McDonnell Douglas MD-12 aircraft. Team members from engineering, manufacturing, assembly, and other disciplines used the integrated product development process to cut the time required to design and build the new system to half that required for a smaller unit on Boeing's 747 aircraft.



ing parts on the assembly line. These techniques are then applied to real-time activity on the shop floor. Early results from the training program have shown consistently impressive productivity gains.

At Hamilton Standard's electronics manufacturing facility in Farmington, Connecticut, for example, employees building transformers learned to apply kaizen techniques to achieve new productivity goals. Their process improvements yielded a 20 percent reduction in the area's floor space and a 68 percent reduction in the distance parts must travel during assembly operations, with a 40 percent reduction of work-in-process inventory.

After the same program was implemented on the heat pump line at Carrier's plant in Collierville, Tennessee, the length of that assembly line was trimmed 35 percent overall, floor space requirements were reduced 26 percent, and work-in-process inventory was slashed 40 percent, while the total number of defective parts produced was cut in half, to less than one percent.

#### Sikorsky Benefits from Inventory Controls

At Sikorsky, the implementation of process changes on its helicopter production lines, coupled with a new computerized parts tracking and distribution system, has driven inventory down by more than 40 percent, or approximately \$425 million, since 1988. This rep-

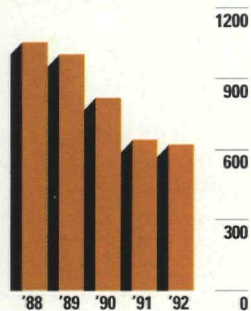
resents the largest single asset reduction in UTC's history and substantially accounts for Sikorsky's steadily increasing levels of productivity and profitability in recent years.

Sikorsky also has cut its production lead times significantly by utilizing lean manufacturing methods, and as part of a continuous improvement process, employees are working to find even faster ways of meeting delivery schedules.

Customer satisfaction is absolutely critical for UT Automotive, one of the leading suppliers of systems and components to the auto industry. In a highly competitive environment that demands manufacturing precision and just-in-time deliveries, car makers today are expecting continuous improvement in all aspects of their suppliers' business, from price and quality to timely shipments.

One of UT Automotive's most notable accomplishments in 1992 was the management of its working capital. Through continuous improvement processes, working capital turnover was raised to more than seven turns, or more than one full turn higher than in 1991, for a 19 percent improvement.

**Sikorsky Inventory**  
\$ Millions (Yearly averages)





Pratt & Whitney also has taken on many initiatives to improve productivity and profitability. As an example, a team of shop floor workers and their supervisors at its plant in Middletown, Connecticut, reduced the time needed to set up a complex, seven-axis machining center, which is used to manufacture engine fan case assemblies, from three hours to only 10 minutes.

The company has achieved similar gains elsewhere. Employees at Pratt's plant in North Haven, Connecticut, for example, have reduced the cycle time for a major process needed to manufacture high turbine blades from three weeks to three days, with an accompanying \$12 million reduction in inventory.

The use of flow lines, lean production techniques and other process improvements has freed up sufficient floor space at Pratt locations to make it possible for the company to consolidate its manufacturing activities and close a 525,000-square-foot plant in Southington, Connecticut. Pratt also was able to move 40 percent of its military engine assembly operations from its plant in East Hartford, Connecticut, to the Middletown facility. The company intends to consolidate these assembly operations entirely in Middletown as part of a plan to vacate 2.1 million square feet of space at the East Hartford site by 1994.

### Integrating Design and Manufacturing Ideas

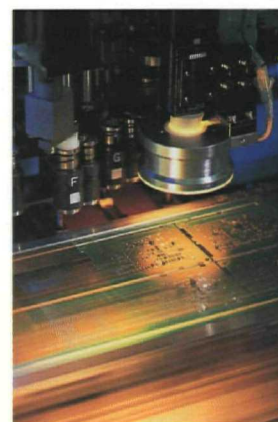
In addition to manufacturing process improvements, United Technologies is working to reduce the time needed to deliver an innovation from the drawing board to the factory floor. One is integrated product development, or IPD, a concurrent engineering process that pulls together employee experts in engineering, manufacturing, purchasing, and other areas at the very beginning of a new product cycle. With continuous feedback from customers and suppliers, these teams design both the products and the processes needed to build them in the shortest time.

Hamilton Standard employed integrated product development to produce the world's largest air cycle machine, an important part of the environmental control system that will regulate cabin temperature in the Boeing 777 and the McDonnell Douglas MD-12 aircraft. Team members from various business disciplines cut the lead time to design and build the new system to half that required for a similar but smaller unit on Boeing's 747 aircraft.

Pratt & Whitney used the IPD process to halve the development cycle for its hollow, shroudless fan blade, which is one of the key innovations of the powerful new PW4084 turbofan. IPD allowed the company to speed this advanced-technology engine into development and certification testing well ahead of the competition.

Total quality management is the cornerstone of every continuous improvement undertaken by United Technologies. At Otis, the world's leading maker of elevators and escalators, the rate of unscheduled elevator service calls, an important quality indicator, was reduced by 11 percent over the last two years, with the company's Japanese subsidiary, Nippon Otis, leading the way.

Otis reinforced its commitment to customer satisfaction in 1992 by opening a Quality Assurance Center adjacent to the 29-story Otis Research Center in Bristol, Connecticut. The new facility will be used to test, evaluate and qualify the performance of new elevator and escalator components and subsystems for the global marketplace. ■



Automated assembly lines at UT Automotive's plant in Tampa, Florida, will be making electronic modules for next-generation Ford Taurus and Mercury Sable models.

A team of shop floor workers and supervisors at Pratt & Whitney's plant in Middletown, Connecticut, used a continuous improvement process to reduce the setup time needed to machine large fan case assemblies from three hours to only 10 minutes.







Proprietary development of shroudless, hollow fan blade technology enabled Pratt & Whitney to build the PW4084, the world's most powerful turbofan engine.



# Leading the Way

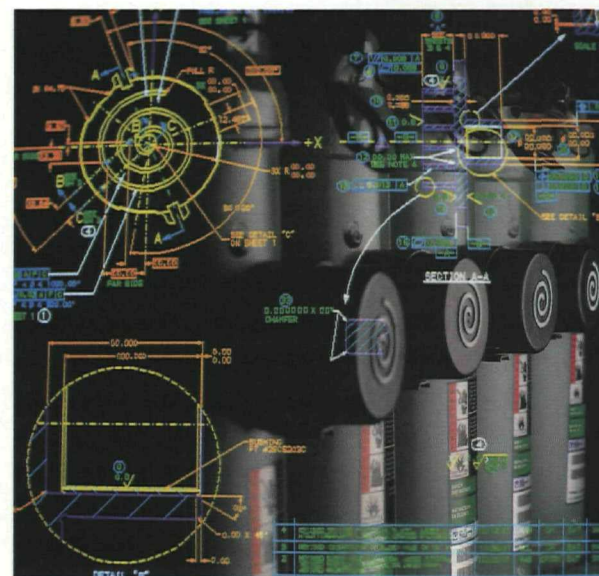
**UTC remains committed to R&D investments to fuel new product introductions and sustain a competitive edge in the marketplace.**

Pratt & Whitney is meeting the power needs of a new generation of jumbo jetliners with engine technologies that are already on the threshold of tomorrow. Take the PW4084, the most powerful commercial turbofan ever built. This advanced-technology engine achieved a record 90,000 pounds of thrust during initial test runs in 1992. That's 45 percent higher than any engine in airline service today. A single PW4084, in fact, has enough thrust to power two Boeing 737s. The new powerplant is scheduled to enter service in 1995 with United Airlines and All Nippon Airways on their new twin-engine Boeing 777 widebody aircraft.

## Hollow Fan Blades: An Enabling Technology

The PW4084 is actually one of several "growth" versions of the same PW4000 engine that has been in commercial service worldwide since 1987 and produces between 50,000 and 62,000 pounds of thrust. At a glance, what distinguishes the PW4084 from other high-thrust engines in Pratt's lineup of large turbofans is its mammoth, shroudless fan. At 112 inches in diameter, the fan is the company's biggest, and its titanium blades are of a proprietary hollow design that reduces the engine's overall weight and enables it to achieve its unprecedented thrust.

For the next generation of commercial aircraft requiring more than 100,000 pounds of thrust, Pratt & Whitney has developed ultra-high-bypass Advanced Ducted Propulsor (ADP) technology, which will incorporate an even larger fan system driven through a powerful gearbox. Variable-pitch fan blades, developed by Hamilton Standard, will be used in place of a conventional thrust reverser to help slow the plane. Pratt



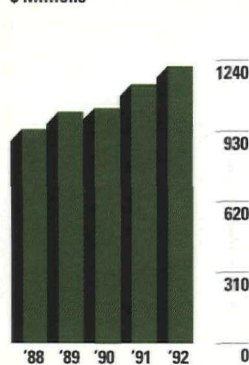
**Extensive computer modeling and experimentation helped Carrier develop its new line**

**of compact, quiet, highly efficient Millennium™ scroll compressors.**

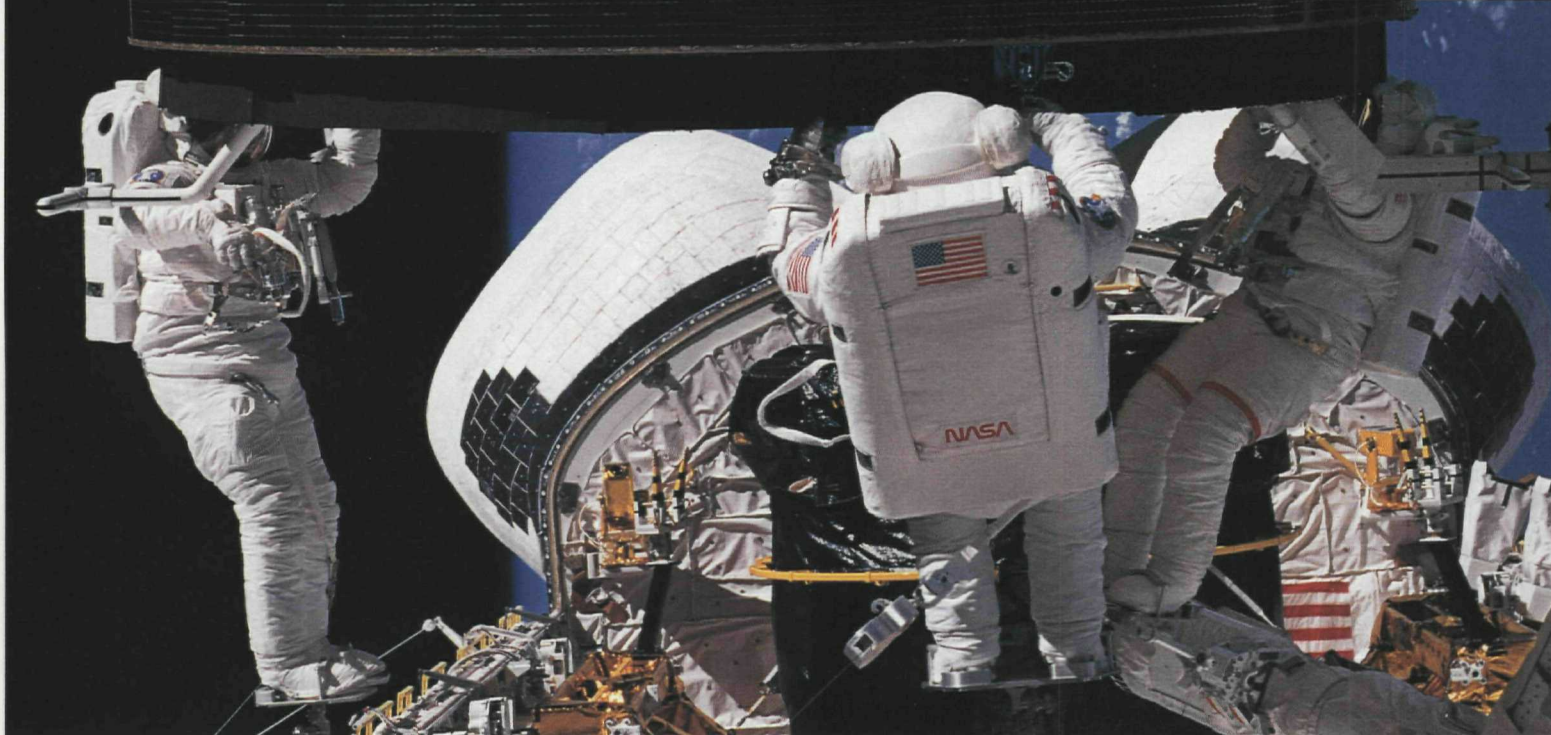
ran successful ground tests of a full-scale ADP demonstrator with a PW2000 core in 1992, and the system will undergo wind tunnel tests in mid-1993. ADP technology has the potential to significantly reduce aircraft fuel consumption, engine noise and emissions in both commercial and military applications.

For the next generation of jet fighters like the U.S. Air Force's F119-powered F-22 aircraft, Pratt has developed an innovative thrust vectoring nozzle technology, enabling a pilot to manipulate the engine exhaust nozzle up or down to improve aircraft maneuverability and reduce the length of runway required for takeoff and landing. Pratt is now working on the

**R&D Expenses**  
\$ Millions







Space shuttle Endeavour astronauts, wearing Hamilton Standard space suits and life support systems, retrieved a wayward communications satellite during their mission in May. The dramatic rescue marked the first time three astronauts had ever walked in space at the same time.

development phase of an F119 engine contract, awarded in 1991, that has a potential value of more than \$10 billion once full production begins. The first production model of the F119 began sea-level tests in late 1992.

#### Technology: A Competitive Discriminator

UTC uses technology as a competitive discriminator across the corporation. It fuels new product introductions and allows UTC companies to remain leaders in the markets they serve. Carrier, for example, invested more than \$125 million in technology development in 1992, and it plans to commit over \$100 million a year in R&D through 1995 to enhance future profitability.

One of Carrier's major technology initiatives in recent years has been the development of high-efficiency scroll compressors for residential air conditioners and heat pumps and for some smaller commercial units. Compressors largely determine the overall efficiency, reliability and sound levels of air conditioning systems. Carrier regards such components as strategic and designs and manufactures them internally to differentiate its products from competitors' in both cost and performance.

In late 1992, Carrier opened a scroll manufacturing facility in Arkadelphia, Arkansas. The company has invested about \$100 million in plant and equipment, and in developing and qualifying its scroll design. By

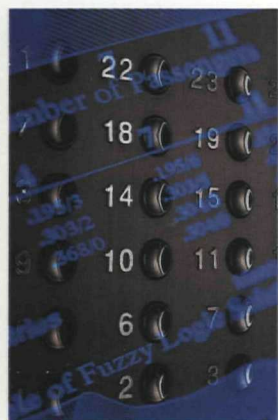
1994, the facility is expected to be producing about 750,000 units annually.

The successful introduction of the scroll compressor is part of Carrier's overall strategy to develop new lines of energy-efficient heating and cooling systems that are smaller than earlier models, are easier and less costly to manufacture, and take up less space when installed.

That strategy of miniaturizing its products has been paying off. Carrier significantly increased sales and profits in the North American residential marketplace in 1992, largely as a result of strong customer acceptance of its new, compact Cobra line of condensing units for air conditioning systems.

#### New Technologies to Meet Customer Needs

Otis' strategic R&D investments drive its performance as well and provide competitive advantage as the world's leading manufacturer of elevators and escalators. Throughout the 1980s and into the 1990s, Otis has led the industry with a \$1 billion commitment to achieve system-level redesign of elevators and escalators, transitioning from electro-mechanical to third-



Otis has introduced fuzzy logic controls in its Elevonic® 411™ gearless elevators for the Japanese marketplace. Fuzzy logic software developed jointly with UTC's Research Center uses sophisticated mathematical methods to enhance elevator dispatching.



generation solid state controls. These generational changes have dramatically reduced passenger waiting times, increased system handling capacities, improved reliability, decreased installation and maintenance times, and enabled sophisticated on-site and remote diagnostics.

An example of significant innovation currently ongoing at Otis is incorporation of the sophisticated mathematical techniques of neural networks and what is sometimes termed "fuzzy logic" within elevator dispatching systems.

With the support of United Technologies Research Center, the R&D arm of the corporation, Otis recently introduced fuzzy logic dispatching in its Elevonic® 411™ gearless system in Japan, where the requirements for advanced elevator technologies are the highest in the world. Fuzzy logic is a form of artificial intelligence that uses sophisticated mathematical methods to deal with approximations, or "gray" areas, in performing certain calculations, such as identifying passenger loads and accurately estimating the number of people waiting for an elevator car at a given location.

Otis also is developing and introducing significant new features such as active suspension systems to improve passenger ride quality in high-speed elevators. Other enhancements include AC variable frequency drives that improve operating efficiencies and reduce power consumption.

#### 10-Year R&D Plan: Building for the Future

The Research Center has fashioned 10-year technology plans in conjunction with UTC's various companies to provide the extended time horizons needed for future



Through scientific visualization, advanced computer graphics enable engineers at UTC's Research Center to

translate complex information into a realistic, three-dimensional form that is clearly seen and easily understood.

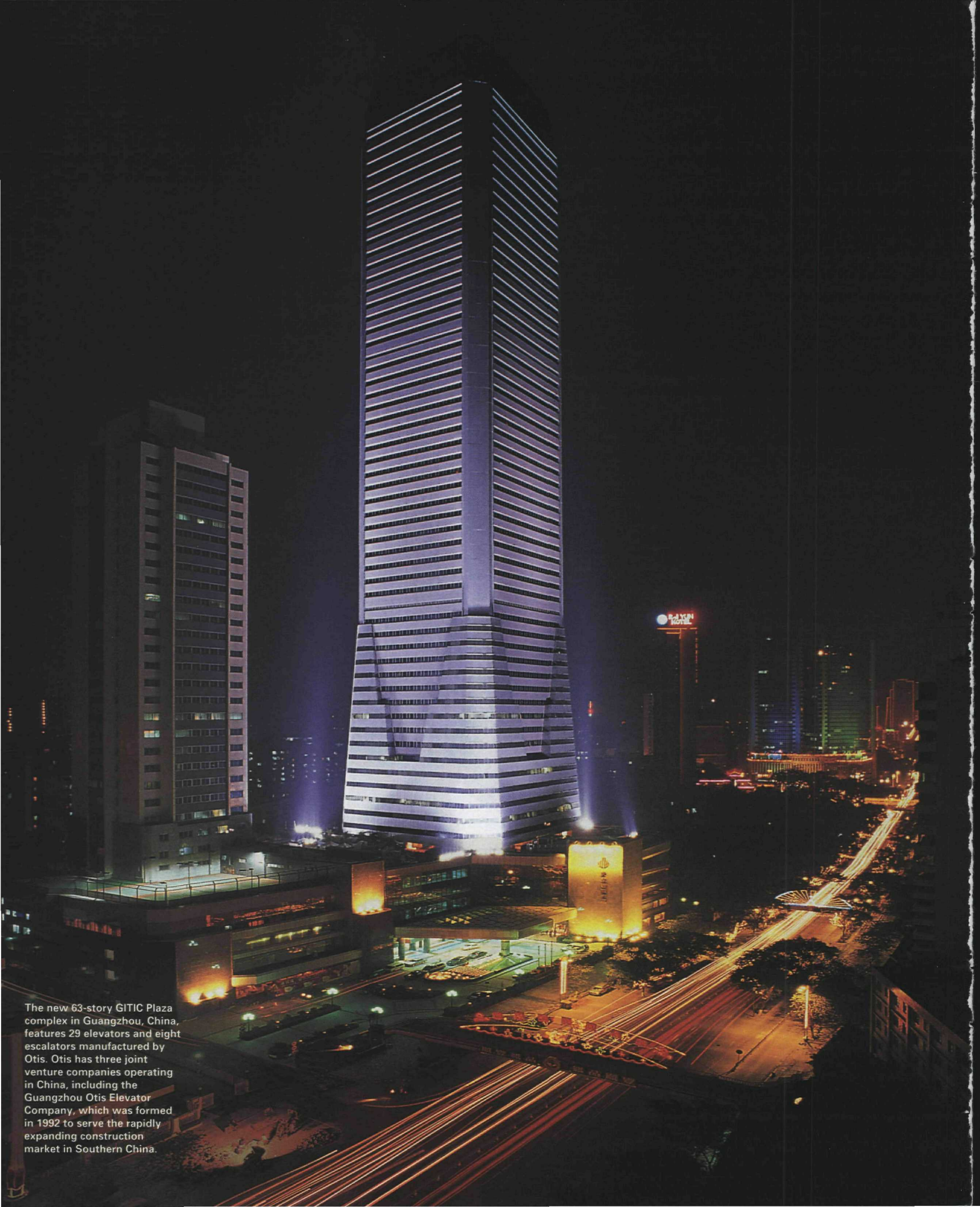


Norden's highly sophisticated phased array radar antenna for the U.S. Air Force and Army Joint STARS airborne surveillance system can look deep into hostile or potentially hostile areas to help detect, identify, classify, and track a variety of ground-level targets.

product development. The focus is on technology innovations in three key areas: those that enable change to occur, like computer-aided design systems; those that force change to occur, like advances in electronics, photonics and composite materials; and those that are critical to maintaining competitive advantage, like rapid prototyping and integrated product development.

One such technology, scientific visualization, is now being used at the Research Center to analyze large amounts of technical data with the aid of modern computer graphics and to translate complex information into a three-dimensional form that can be clearly seen and easily understood. This technology enables researchers to study and evaluate the combustion efficiencies of a jet engine, for example, or the physical phenomena of helicopter flight. It can similarly help designers and engineers analyze the heat transfer properties of an air conditioning system or the noise and vibration characteristics of high-speed elevator systems. ■





The new 63-story GITIC Plaza complex in Guangzhou, China, features 29 elevators and eight escalators manufactured by Otis. Otis has three joint venture companies operating in China, including the Guangzhou Otis Elevator Company, which was formed in 1992 to serve the rapidly expanding construction market in Southern China.



# Mapping the Future

**Much of UTC's growth will continue to come from international business, which already accounts for 55 percent of total revenues.**

From Paris to the People's Republic of China, Otis elevators carry passengers up and down more than 60 of the world's 100 tallest buildings. Carrier heating and cooling products, meanwhile, maintain comfortable interiors for millions of people worldwide, from office workers in Madrid to apartment dwellers in Seoul and Singapore. The Royal Hong Kong Auxiliary Air Force today flies a new fleet of Sikorsky helicopters on search-and-rescue missions in the South China Sea. Soon, Russian-built airliners will be flying with the power of Pratt & Whitney engines.

## Localization of Assets Key to Global Growth

United Technologies has a presence in virtually every country in the world, its divisions operating as local companies in many established and emerging geographic markets. International business, including U.S. exports, now accounts for 55 percent of revenues. Nearly half of UTC's employees are based outside the United States, and a full third of production takes place in non-U.S. facilities.

The corporation is achieving globalization largely as a result of a commitment to long-term international partnerships formed through joint ventures and co-production agreements, licensing, and technology transfer. Such alliances are essential in today's business world because of the market knowledge, technology and additional resources each participant brings to these ventures.

Otis, UTC's most global company and the world leader in manufacturing and servicing elevators and escalators, generates fully 80 percent of its revenues outside the United States. Otis began the 1990s by extending its international business to include several



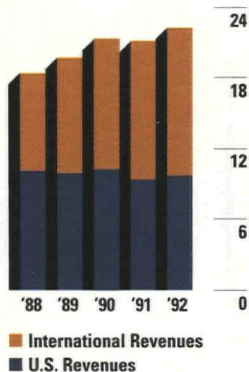
**Korean Air is manufacturing BLACK HAWK helicopters at its Kimhae facility from kits**

**supplied by Sikorsky under a co-production contract with the Republic of Korea.**

new, long-term investments in South Korea, China, Eastern Europe, and the former Soviet Union.

In 1992, Otis formed a joint venture company in Ukraine and added two new ventures in Russia to the two it had formed there earlier. The company also has established ventures or acquired existing companies in Hungary, Poland, Czechoslovakia, and the former German Democratic Republic. The new company in Ukraine will coordinate production with Otis' established manufacturing companies in Russia, which are

**Global Growth**  
\$ Billions





The Pratt & Whitney PW2000 engine, which Daimler-Benz' Motoren- und Turbinen-Union participated in developing, will power the Ilyushin Il-96M, a Russian-built wide-body aircraft that can carry up to 386 passengers.



scheduled to begin production in early 1993 at new factories in St. Petersburg and near Moscow. Russia and Ukraine together represent a market that potentially will require some 50,000 new elevators each year by the end of the century. Otis already services an installed base of some 60,000 units in Russia and Ukraine.

The Asia-Pacific region is another opportunity area for Otis. Population growth and movement from rural areas to urban centers will continue to spur construction of apartments and office buildings in places like China, Korea and the nations of Southeast Asia, where Otis already has a strong local presence. In 1992, Otis broadened its position in China, the largest new-equipment market in the region after Japan, by signing two new joint venture agreements with enterprises in Beijing and Guangzhou.

Construction activity in Pacific Rim nations also will drive much of Carrier's growth internationally over the next decade. Carrier is the world's preeminent supplier of heating, ventilating and air conditioning equipment. About 45 percent of its production and half its revenues are generated outside the United States. Carrier's sales in the Asia-Pacific region have grown at an average rate of 19 percent per year over the last five years. This trend is expected to continue, because the top five countries for air conditioning growth are in Asia.

In China, one of the fastest growing geographic markets for air conditioning equipment, Carrier purchased a majority interest in Tianjin Uni-Air Conditioning Company in 1992. The joint venture is Carrier's fourth in China since 1987 and its first Chinese venture in air conditioning equipment for residential and small commercial use. Carrier previously had invested in two Chinese ventures in the Shanghai region, focusing on equipment for large commercial applications. Another Carrier venture in the country is a service company.

#### **Pratt Building on International Partnerships**

Pratt & Whitney has been enhancing its global competitiveness by forming international partnerships to facilitate access to geographic markets and to share in the financial and technical risks of its engine programs. Pratt now has 17 commercial engine partnerships with companies in eight countries in Europe and Asia, the largest aerospace markets outside the United States.

Pratt & Whitney and Daimler-Benz' MTU (Motoren- und Turbinen-Union) subsidiary have a long-term business alliance that designates each company as the preferred partner of the other in future engine programs such as the PW4084, a growth

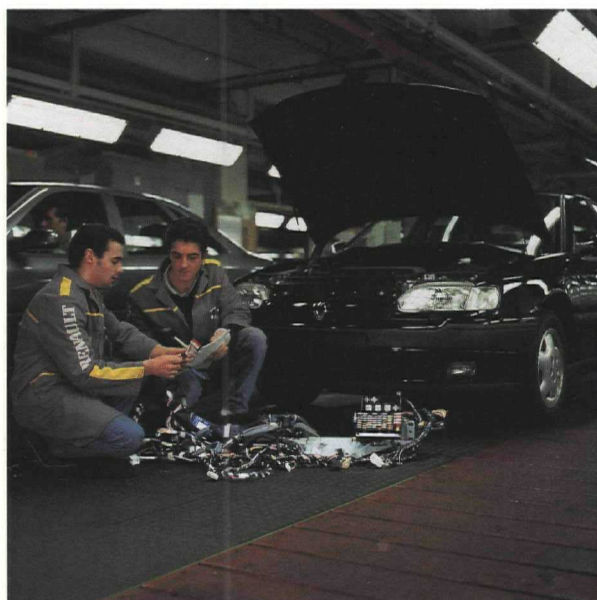


version of the PW4000 turbofan. Pratt and MTU also have been collaborating to develop business relationships with aerospace enterprises in the Commonwealth of Independent States. The two companies are now working with the Ilyushin Design Bureau, one of the leading Russian airframe builders, to supply 80 PW2000 engines for 20 widebody passenger and cargo jets ordered by Russian International Airlines, a spinoff of Aeroflot. A prototype aircraft will be flown in 1993 at the Paris Air Show.

In early 1993, the Commonwealth of Independent States certified the JT8D-powered 737-200 aircraft for ownership and operation within that country. This marks the first time an American-made combination of engines and aircraft has been certified for use there.

Hamilton Standard also is making inroads in the region. In 1992, as part of a strategic initiative to pursue emerging opportunities in Eastern and Central European countries and the Commonwealth of Independent States, Hamilton Standard acquired a majority interest in Avia Aviation Company, a propeller manufacturer in the Czech Republic.

Meanwhile, NPO Energomash, the former Soviet Union's leading rocket design company, has selected Pratt & Whitney's Government Engines & Space Propulsion unit as the exclusive company to represent its space propulsion products in the United States.



UT Automotive is the leading independent supplier of wire harness electrical distribution

systems in Europe and North America, the world's two largest automotive markets.



Carrier Transcold Division, a leading global supplier of transportation refrigeration equipment, is successfully penetrating emerging markets, such as eastern Germany, Russia, Poland, Hungary, and the former Czechoslovakia.

### Sikorsky Winning New International Business

Sikorsky, the world's leading helicopter manufacturer, has made the globalization of its marketing efforts a top priority to supplement domestic sales to the U.S. military services and commercial customers.

One-fourth of the company's revenues today come from sales and licensed production contracts to international markets, up from an average of 10 percent in the mid-1980s. Foreign sales could account for as much as 30 percent of Sikorsky's total revenues in 1993 and 40 percent or more later in the decade. Co-production in countries worldwide will play a pivotal role in Sikorsky's continued success in the global market.

In 1992, the Turkish Government awarded Sikorsky a contract valued at more than \$1 billion, the company's largest foreign order ever, to provide 95 BLACK HAWK helicopters for the Turkish Armed Forces. The first 45 aircraft will be built in the United States, and the remaining 50 will be co-produced in Turkey from parts manufactured in Turkey and kits supplied by Sikorsky. Turkey has an option to buy 55 additional helicopters under this co-production program and may need as many as 200 more over the next two decades.

Sikorsky also received helicopter contracts from Hong Kong, Saudi Arabia, Morocco, Greece and Mexico, and it is pursuing follow-on orders in Colombia, Japan, Korea, Taiwan, and Australia. New orders are being sought in Kuwait, Brazil and The Netherlands. ■

# Management's Discussion and Analysis

## Management's Discussion and Analysis of Results of Operations and Financial Position

The following discussion and analysis sets forth major factors affecting the Corporation's results of operations during the three-year period ended December 31, 1992. It also comments on the Corporation's financial position at that date as presented in the accompanying financial statements. Operating results for the Corporation's business segments are shown in the Consolidated Summary of Business Segment Financial Data on pages 43 through 45 of this Annual Report.

## Business Environment

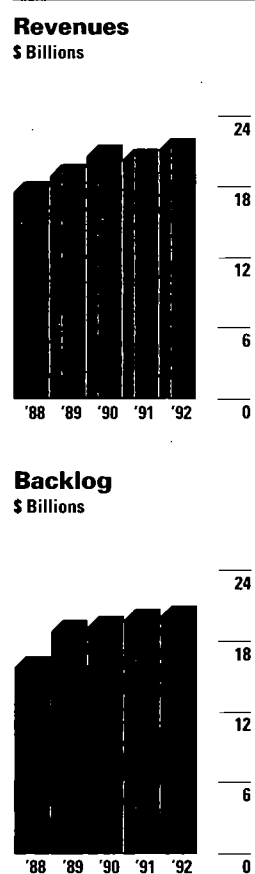
The Corporation's major business units serve government and commercial aerospace, automotive manufacturing, commercial property and residential housing customers. Like many businesses, these operations are increasingly affected by global, as well as regional, economic cycles.

Management believes that while the U.S. economy is showing signs of a continuing, albeit weak, recovery, key international economies appear to be lagging behind and will remain a negative factor in the Corporation's results of operations in the near term. The prolonged downturn in the global economy continued to adversely impact several core markets served by the Corporation. While residential housing starts showed an improvement of 18% over comparable 1991 levels, U.S. commercial vacancy rates were at an all-time high in 1992 and are expected to remain high by historical standards through the next few years. Commercial construction starts have been declining since the late 1980's as demand for office and retail space has weakened. These problems have also impacted international markets. Construction activity in Japan and Western Europe has been flat for the past

several years as those areas struggle with the impact of the global recession.

The Corporation's aerospace and defense businesses continue to respond to a changing global political environment. The defense industry continues to experience downsizing as the U.S. Defense budget shrinks and as the threat of large scale conflict between superpowers diminishes. Recent peace initiatives and related changes in Eastern Europe have served to reduce both U.S. and foreign defense spending as a whole. However, management believes the Corporation is well positioned as a major supplier for key domestic and foreign defense programs. The F-22 development program is expected to retain support, although production may be delayed until later in the decade. Sikorsky was recently awarded a U.S. Government contract for 300 Black Hawk helicopters through 1997 and also won a contract for up to 95 Black Hawk helicopters through 1998 from the government of Turkey. Uncertainties still exist, however, regarding the continuing support by the U.S. Government for programs such as RAH-66 Comanche and C-17, in which the Corporation is a key participant. The Corporation has, however, reduced its reliance on defense contracts over the past few years and its exposure to loss from significant fixed-price development contracts. Management foresees a decline in business derived from the U.S. Government from 22% of total sales in 1990 to 14% in 1995.

North American car and light truck production was up 8.8% in 1992 over 1991 levels, but still remains 11% below the 1988 peak. The car market in Europe has been increasingly important to the Corporation over the past three years. European car production, however, declined 4% in 1991 and a further 2% in 1992.





The continued worsening of the financial condition of the commercial airline industry, discussed below, has had a significant impact on the Corporation's 1992 results. While traffic for the U.S. domestic airlines increased from depressed 1991 levels, it remained considerably below management's expectations. The competitive pricing strategies utilized by many of the airlines have resulted in unprofitable operations. This impacts the Corporation in a number of ways. The Power segment, primarily through Pratt & Whitney, is a major supplier of commercial engines and spare parts. The Flight Systems segment, through Hamilton Standard, provides fuel control and environmental control systems for commercial aircraft.

### **Commercial Airline Industry**

As indicated above, the Corporation's Power segment, representing 31% of consolidated revenues in 1992 and, to a lesser extent the Flight Systems segment, are heavily dependent on the commercial airline industry. This industry has been adversely affected over the past few years by the global economic recession as well as by the existence of significant political uncertainties in the Middle East and Eastern Europe. The initial effects of these problems were reflected in significantly reduced airline travel and, more recently, in intensely competitive pricing strategies followed by many of the airlines. The U.S. airline industry alone has incurred losses of approximately \$8 billion over the past 3 years. Relative to 1989, three former domestic carriers are no longer in existence (Pan Am, Eastern, and Midway) and three others operate under bankruptcy protection (TWA, America West, and Continental).

As this environment continued to worsen, the latter part of 1992 saw a number of major domestic and foreign airlines announce their interest in rescheduling delivery of aircraft on order and, in some cases, canceling existing orders and options for future delivery. In addition, the airlines tended to ground older, less efficient aircraft, resulting in a decrease in the volume and order rate of spare parts. The spare parts business has traditionally been an important source of profitability to the Corporation and its decline has had a significantly adverse impact on operating results of Pratt & Whitney. While spare parts sales in 1992 approximated the depressed levels of 1991, orders for spare parts in 1992 were 13% lower than those in 1991 and a full 30% below those in 1990.

Anticipated deferral and/or cancellation of orders has caused airframe manufacturers to adjust production schedules downward for many types of aircraft.

These actions are in turn resulting in a negative impact on shop load as suppliers to the airframe manufacturers cut back production to adjust to changes in the level and timing of demand. For the Corporation, this came at a time when the business was already under severe pricing pressure from the competition for new engine sales. The mix of engine sales has shifted to newer, lower margin engines. Shipments of new commercial engines totaled 610 in 1992, down from 692 in 1991. Shipments of higher margin JT8D series engines were down by 159 units from 1991, with an increase over 1991 in shipments of lower margin engines. This shifting to lower margin engines is expected to continue in the future. The change in engine mix will continue to have a significant unfavorable impact on the level of revenue and profitability of the Power segment, compounding the unfavorable impact of the reduction in commercial spare parts orders.

### **Fourth Quarter 1992 Actions**

As a result of the condition of the commercial airline industry and the uncertain global economic outlook, management of the Corporation decided to record charges in December 1992 totaling \$701 million against the Power and Flight Systems segments and general Corporate expenses. The charges cover \$447 million for credit and other exposures related to the airline industry, \$169 million for various contract matters and \$85 million for additional restructuring.

### **Restructuring and Cost-reduction Efforts**

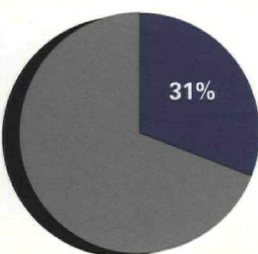
On January 20, 1992, the Corporation's Board of Directors approved restructuring plans, which included a goal of reducing overall operating costs by \$1 billion a year beginning in 1994, resulting in a \$1.275 billion pre-tax charge to 1991 operations (\$1.21 billion after-tax, or \$10.06 per share). The restructuring actions included eliminating jobs, closing or consolidating facilities, and improving design, engineering and manufacturing processes.

As described above, the continued worsening of the financial condition of the airline industry and significant adjustments to aircraft production and delivery schedules prompted management to consider additional actions. As a result, it was decided in the fourth quarter that additional restructuring actions were necessary and, accordingly, additional provisions were recorded at Pratt & Whitney and Hamilton Standard totaling \$70 million and \$15 million, respectively.

At December 31, 1992, headcount reduction stood

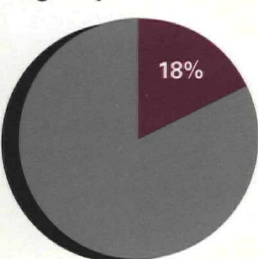
## 1992 Revenues

### Power



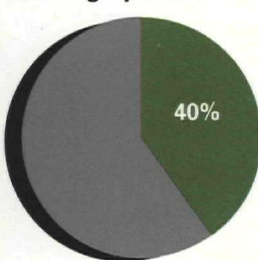
Pratt & Whitney  
(commercial business)  
\$3.7 billion  
Pratt & Whitney  
(government business)  
\$2.0 billion  
Pratt & Whitney Canada  
\$1.2 billion

### Flight Systems



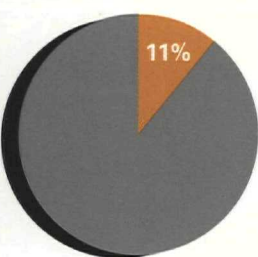
Sikorsky \$2.1 billion  
Hamilton Standard \$1.2 billion  
USBI/Chemical Systems \$0.5 billion  
Norden \$0.2 billion

### Building Systems



Otis \$4.5 billion  
Carrier \$4.3 billion

### Automotive



UT Automotive \$2.4 billion

at 13,026 (10,926 eliminated in 1992) and manufacturing square footage eliminated was 2.8 million square feet (including 2.6 million square feet in 1992). Most operating units attained their goals for 1992, and the Power segment, due to the conditions in the airline industry previously discussed, accelerated and expanded its part of the restructuring plan. Cost savings achieved in 1992 relating to headcount reduction and facility closures and improvements in product design, engineering, and manufacturing processes were approximately \$223 million and \$196 million, respectively.

## Results of Operations

### Revenues:

Increased 4% or \$770 million from 1991 to 1992;

Decreased 2% or \$526 million from 1990 to 1991.

Sales increased 4% in 1992 and decreased 3% in 1991.

It is estimated that increases in selling prices to customers had no impact in 1992 and averaged 3% in 1991. The net impact of translating sales of foreign subsidiaries was not significant in 1992 and 1991, indicating that the real volume of sales increased approximately 4% in 1992 and decreased approximately 6% in 1991.

Financing revenues and other income, less other deductions, decreased approximately \$31 million in 1992, primarily due to a reduction of approximately \$103 million in commercial aircraft engine program participation fees partially offset by higher licensing and royalty fees received in 1992. Financing revenues and other income increased by \$76 million in 1991 primarily from an increase of \$103 million in commercial aircraft engine program participation fees.

Revenues of the Corporation's principal business segments for the years ended December 31 were:

In Millions of Dollars	1992	1991	1990
Power	<b>\$6,940</b>	\$7,171	\$7,297
Flight Systems	<b>3,983</b>	3,973	4,034
Building Systems	<b>8,835</b>	8,140	7,988
Automotive	<b>2,378</b>	2,084	2,621

In 1992, 54% of Power segment revenues were in the commercial engine market (53% in 1991 and 54% in 1990); 29% were for military use (29% in 1991 and 28% in 1990); and 17% were in the general aviation market (18% in 1991 and 1990).

Power segment revenues decreased in 1992 by \$231 million (3%) primarily due to lower commercial and government engine sales offset somewhat by a slight increase in government spare parts sales. Power

revenues decreased in 1991 by \$126 million (2%) primarily due to reductions in commercial spare parts sales and general aviation engine shipments, partially offset by a \$103 million increase in commercial aircraft engine program participation fees. Commercial spare parts sales in 1992 and 1991 were adversely impacted by significantly reduced airline travel and the weakened financial condition of the North American commercial airline industry.

Helicopter business revenues in 1992 contributed 52% of Flight Systems segment revenues (51% in 1991 and 48% in 1990); sales of defense electronics, space propulsion and other aircraft products provided the remainder of the segment's revenues. Flight Systems segment revenues in 1992 remained essentially flat and decreased \$61 million (2%) in 1991. The 1991 decrease arose principally from decreased revenues in most businesses within the segment, partially offset by increased helicopter business volume.

Building Systems segment 1992 revenues included 51% from elevator and escalator products and services (53% in 1991 and 50% in 1990) and 49% from air conditioning products and services (47% in 1991 and 50% in 1990). Revenues increased \$695 million (9%) in 1992 and \$152 million (2%) in 1991. The impact of foreign exchange rates versus the dollar increased sales in 1992 by approximately \$137 million and decreased sales in 1991 by approximately \$67 million. Revenues in 1992, exclusive of the translation impact, reflected the significant increase of Otis service sales over 1991 levels and higher volumes for Carrier, especially in the North American residential and Asian-Pacific regions as well as increases in the transportation refrigeration business. These positive results were offset somewhat by a decrease in 1992 new equipment sales for Otis. The increased revenues in 1991, exclusive of the translation impact, were higher for service and new equipment in the elevator business, offset by lower revenues in the air conditioning business caused by lower volume. Increases in elevator service and new equipment revenues in the Europe and Asian-Pacific areas were partially offset by declines in North America. The air conditioning volume reductions were attributable to generally weak global residential and commercial construction markets.

Automotive segment 1992 revenues increased \$294 million (14%) as a result of increased North American car and light truck production volume and favorable European market penetration. Segment revenues de-

creased \$537 million (20%) in 1991. Approximately one-third of the decrease was due to significantly lower North American automobile production and market penetration with the remainder primarily attributable to the divestiture of certain related businesses in 1990.

#### Cost of goods and services sold as a percent of sales:

decreased 1% from 1991 to 1992;

increased 4% from 1990 to 1991.

Cost of goods and services sold as a percent of sales in 1992 remained relatively constant with that of 1991 reflecting the ongoing efforts of the cost reduction program. The 1991 increase was attributable to a shift in the mix of engines sold to lower margin engines in the commercial aircraft and general aviation engine businesses, lower selling prices on elevator and escalator new equipment sales and service caused by greater price competition in economically weakened markets, and environmental remediation charges of approximately \$300 million.

#### Research and development expenses increased:

7% or \$79 million from 1991 to 1992;

11% or \$114 million from 1990 to 1991.

Gross research and development expenditures in 1992 and 1991, before the reductions described below, were 1% higher and 1% lower than in 1991 and 1990, respectively. The increase in 1992 resulted from increased expenditures in both the Power and Building Systems segments. In 1992, and to a somewhat lesser extent in 1991, substantial reductions in expenditures for military aircraft engine programs were offset by significantly higher expenditures for commercial engine programs, including new engine models and commitments to improve fuel efficiency, and to increased expenditures in the Building Systems segment.

Billings to participants for certain advanced commercial aircraft engine program expenditures and partial sponsorship of military aircraft engine programs aggregating \$66 million, \$126 million and \$251 million in 1992, 1991 and 1990, respectively, have been applied as reductions of research and development expenses. The decrease in fees in 1992 is the result of lower fees from reduced sponsorship of military aircraft engine programs, partially offset by higher commercial engine program fees. The decrease in 1991 was almost entirely attributable to reduced sponsorship of military aircraft engine programs.

#### Selling, service and administrative expenses:

increased 11% or \$319 million from 1991 to 1992;

decreased 3% or \$82 million from 1990 to 1991.

The increase from 1991 to 1992 results primarily from \$360 million of the charges recorded in the fourth quarter of 1992 and the incremental 1992 impact of FAS 106, "Employers' Accounting for Postretirement Benefits Other Than Pensions," offset somewhat by decreases in administrative expenses reflecting the ongoing impact of the restructuring efforts. Selling, service and administrative expenses as a percent of sales remained relatively constant from 1990 to 1991.

#### Operating profits (losses):

increased \$1,086 million from 1991 to 1992;

decreased \$2,150 million from 1990 to 1991.

Operating profits (losses) of the Corporation's principal business segments for the three years ended December 31 were:

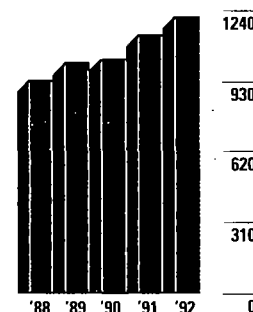
In Millions of Dollars	1992	1991	1990
Power	<b>\$(305)</b>	\$(283)	\$1,010
Flight Systems	<b>298</b>	(213)	90
Building Systems	<b>465</b>	4	425
Automotive	<b>111</b>	2	150

Operating profits (losses) above include the restructuring provisions for 1992 and 1991 discussed previously. For purposes of the analytical discussions presented in the following paragraphs, the operating profits (losses), excluding the 1992 and 1991 restructuring provisions, were:

In Millions of Dollars	1992	1991	1990
Power	<b>\$(235)</b>	\$411	\$1,010
Flight Systems	<b>313</b>	(77)	90
Building Systems	<b>465</b>	327	425
Automotive	<b>111</b>	61	150

Power segment operating profits decreased \$646 million (157%) in 1992 and decreased \$599 million (59%) in 1991. The decrease in 1992 resulted from the previously discussed charges recorded in the fourth quarter of 1992 relating to exposures in the commercial airline industry, reduced commercial engine shipments, lower margins on the mix of sales, and lower participation fees. The decrease in 1991 was primarily attributable to reduced general aviation engine shipments and non-military engine margins, reduced commercial spare parts sales and environmen-

**R&D Expenses**  
\$ Millions



tal remediation charges of \$108 million, partially offset by increased commercial aircraft engine program participation fees.

Flight Systems segment operating profits increased \$390 million in 1992 and decreased \$167 million in 1991. The 1992 increase in profitability resulted primarily from improved operating performance at Sikorsky, the absence of the 1991 pre-tax charge relating to Norden's Multi Mode Radar System contract and the absence of the significant environmental remediation activities experienced in 1991. Also favorably impacting the full year results was the settlement of several government contracting claims. In 1984, the Corporation's Norden subsidiary entered into a fixed-price contract to design, develop and produce an advanced radar system for the Israeli government. In the second quarter of 1991, the Corporation signed an agreement with the Israeli government which is intended to contain the Corporation's financial risk, while meeting the customer's operational requirements. The Corporation recorded a pre-tax charge of \$148 million related to this and other contract matters. The decrease in segment operating profits in 1991 resulted primarily from that charge and from charges of \$148 million for environmental remediation activities, partially offset by increased helicopter business volume.

Building Systems segment operating profits increased \$138 million (42%) and decreased \$98 million (23%) in 1992 and 1991, respectively. The 1992 increase is primarily a result of increased air conditioning business volume, most notably in the North American region and the transportation refrigeration business, as well as a more profitable mix of sales. The 1991 decrease is primarily attributable to reduced air conditioning business volume, increased price competition in the elevator and escalator business, and increased operating expenses in the air conditioning business, partially offset by increased service revenue volume in the elevator and escalator business.

Automotive segment operating profits increased \$50 million (82%) and decreased \$89 million (59%) in 1992 and 1991, respectively. The 1992 increase resulted from increased North American production volume and European market penetration. Also impacting full year profits was a gain on the divestiture of two business units, offset somewhat by increased research and development costs. The 1991 decrease was primarily attributable to the significant reduction in North American automobile production and the divestiture of certain businesses in 1990.

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**Interest expense decreased:**

17% or \$57 million from 1991 to 1992;

6% or \$23 million from 1990 to 1991.

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The 1992 decrease is a result of a reduction in the average debt outstanding during 1992 combined with a reduction in interest rate levels during the year.

The 1991 decrease was primarily attributable to a reduction in interest rate levels and a slight decrease in average borrowings in 1991.

The weighted-average interest rate on the Corporation's short-term borrowings in 1992 was 11.3% (11.4% in 1991 and 10.6% in 1990), and the average composite rate for short-term borrowings and long-term debt, excluding the ESOP debt guarantee, for 1992 was 7.8% (8.9% in 1991 and 9.8% in 1990). The average rate applicable to debt outstanding at December 31, 1992 was 9.2% for the short-term borrowings, and the average composite rate, including all long-term debt other than the ESOP debt guarantee, was 7.4%.

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**Net loss** decreased \$734 million from 1991 to 1992;

**Net income** decreased \$1,772 million from 1990 to 1991.

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In addition to the matters previously discussed, the Corporation adopted FAS 106 in the fourth quarter of 1992 with effect from January 1, 1992. The transition obligation at that date of \$482 million, net of tax, was recorded as a charge to earnings. The incremental 1992 expense associated with FAS 106 was \$71 million.

The Corporation also adopted the provisions of FAS 109, "Accounting for Income Taxes," in the fourth quarter of 1992, with effect from January 1, 1992, resulting in a credit to earnings of \$160 million representing recognition of previously unrecognized tax benefits. This standard requires, among other things, recognition of deferred tax assets (representing future tax benefits) attributable to deductible temporary differences between financial statement and income tax bases of assets and liabilities and to tax carryforwards to the extent that realization of these benefits is more likely than not. If the more likely than not threshold cannot be met, valuation allowances must be recorded to reduce the deferred tax assets to amounts expected to be realized.

Deductible and taxable temporary differences in the same taxing jurisdiction are offset for presentation in the consolidated balance sheet. The following table summarizes the future income tax benefits arising from



net deductible temporary differences and tax carryforwards at December 31, 1992:

In Millions of Dollars

Net deductible temporary differences	<b>\$1,597</b>
Tax carryforwards:	
Acquired loss carryforwards	<b>18</b>
Foreign and state loss carryforwards	<b>105</b>
Foreign tax credits	<b>31</b>
Alternative minimum tax credits (MTC)	<b>51</b>
	<b>1,802</b>
Valuation allowance	<b>(217)</b>
Net future income tax benefits	<b>\$1,585</b>

The deductible temporary differences generally result from normal provisions which will result in future tax deductions. Of the total \$1,597 million tax benefit of net deductible temporary differences, \$351 million results from the restructuring provisions recorded in 1992 and 1991. In addition, \$331 million arises from the accrual of postretirement benefits under FAS 106.

The ultimate realization of the Corporation's deferred tax assets is dependent upon the generation of sufficient future taxable income in the appropriate taxing jurisdictions, primarily the United States. Prior to 1992, the Corporation's U.S. operations have consistently produced taxable income. In 1992, partially as a result of the actual expenditures relating to the 1991 restructuring provision, a U.S. tax loss of approximately \$500 million was incurred. This loss will be fully utilized by carryback to prior years resulting, however, in \$51 million of MTC carryforwards. The Corporation may also incur a U.S. tax loss in 1993 largely as a result of projected expenditures relating to the 1991 and 1992 restructuring provisions and the expected reversal of certain of the charges included in the 1992 fourth quarter provision previously discussed. Such tax loss, if incurred, would be fully utilized by carryback to prior years but would generate additional MTC carryforwards. Management expects that U.S. taxable income will be generated in 1994 and beyond, although it is possible that the Corporation will remain in an alternative minimum tax position for a limited period. While MTC carryforwards have no expiration date, recognition of the benefit of current and projected MTC carryforwards has been limited to the extent such carryforwards are expected to be utilized within a period generally not exceeding ten years.

Foreign and state tax loss carryforwards arise in a number of different taxing jurisdictions with expira-

tion dates ranging from 1993 to 2007. For those jurisdictions where the expiration date or the projected operating results indicate that realization is not likely, a valuation allowance has been provided. Foreign tax credit carryforwards which require future foreign source income to be utilized, expire after five years and generally are fully reserved through valuation allowances.

Federal tax loss carryforwards, which expire in 2000 to 2002, arising from business acquisitions have significant restrictions as to their future realization and consequently are fully reserved. The majority of the tax benefit if these carryforwards were utilized would be credited directly to income.

### Liquidity and Financing Commitments

Management assesses the Corporation's liquidity in terms of its overall ability to generate cash to fund its operating and investing activities. Of particular importance in the management of liquidity are cash flows generated from operating activities, capital expenditure levels, adequate bank lines of credit, and financial flexibility to attract long-term capital on satisfactory terms.

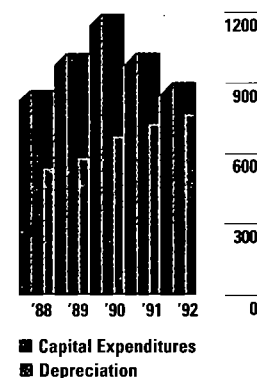
Set forth below is selected key cash flow data from the Consolidated Statement of Cash Flows:

In Millions of Dollars	1992	1991	1990
Net Cash Flows from			
Operating Activities	<b>\$1,203</b>	\$ 1,890	\$ 1,333
Purchase of fixed assets	<b>\$ (920)</b>	\$(1,048)	\$(1,200)
(Acquisitions) dispositions of business units, net	<b>64</b>	(7)	305
Other investing activities	<b>(70)</b>	27	(248)
Net Cash Flows from			
Investing Activities	<b>\$ (926)</b>	\$(1,028)	\$(1,143)
Net Cash Flows from			
Financing Activities	<b>\$ (435)</b>	\$ (517)	\$ (255)

Net cash flows from operating activities in 1992 showed a decrease from 1991 and 1990 levels primarily as a result of the ongoing impact of the Corporation's restructuring and environmental remediation activities.

The substantial fixed asset additions during the period 1990 through 1992 have been necessary to increase productivity, to modernize certain of the Corporation's facilities and to provide for expansion of some product lines. The great majority of these expenditures were for machinery and equipment and

**Capital Expenditures and Depreciation**  
\$ Millions



were made across all business segments. Cash used for financing activities during the period included dividends to preferred and common shareowners and the purchase of the Corporation's Common Stock.

During the years ended December 31, 1992 and 1991, the Corporation met its net financing requirements by adjusting its level of short-term borrowings as required and issuing long-term debt when conditions were considered favorable. The results of the foregoing activities upon the Corporation's financial structure are shown in the following tabulation:

In Millions of Dollars	1992	1991
Short-term borrowings and current portion of long-term debt	\$ 788	\$ 490
Long-term debt	1,964	2,511
Capital lease obligations	394	392
Shareowners' equity	3,370	3,961
Debt to total capitalization	48%	46%

The Corporation's ratio of debt to total capitalization reflects a two percentage point increase from 1991. Operating results in 1992, including the impact of fourth quarter charges combined with the net charge taken as a result of the adoption of FAS 106 and FAS 109, caused a decrease in shareowners' equity of sufficient magnitude to more than offset the reduction in debt and thereby caused the increase in this ratio. The Corporation expects the costs of the restructuring actions will be funded from operations and from the cash flow benefits associated with the restructuring. Consequently, the Corporation's restructuring actions are not expected to result in significant increases in borrowing levels in the next two to three years.

The Corporation believes that existing sources of liquidity are adequate to meet anticipated short-term borrowing needs at similar risk-based interest rates for the foreseeable future. While Moody's Investor Services placed the Corporation on its credit watch list early in 1993, Standard & Poor's recently affirmed the Corporation's debt ratings. Accordingly, the Corporation does not believe its long-term borrowing costs will be materially impacted.

At December 31, 1992, the Corporation had credit commitments by banks totaling \$1.0 billion under two Revolving Credit Agreements. Each agreement provides for borrowings of \$500 million at interest rates up to the prime rate. One commitment expires October 14, 1993 and the other on January 1, 1996. At December 31, 1992, there were no borrowings

under either Revolving Credit Agreement. Long-term financing will continue to be considered in the future if conditions are advantageous, and in that regard, under an effective Registration Statement on file with the Securities and Exchange Commission at December 31, 1992, up to \$871 million of medium-term and long-term debt of the Corporation might be issued.

In addition to the funds requirements discussed above, the Corporation had commitments to finance or arrange financing for customers at December 31, 1992 of approximately \$2.0 billion of commercial aircraft, of which \$545 million may be required to be disbursed in 1993.

### Accounting Changes

The Corporation adopted in the fourth quarter of 1992, with effect from January 1, 1992, Statements of Financial Accounting Standards Nos. 106 and 109 (FAS 106 and FAS 109). FAS 106 requires that the liability for postretirement benefits other than pensions be recognized as the benefits are earned during employees' applicable years of service. The Corporation had previously accounted for those benefits on a pay-as-you-go basis. As permitted by FAS 106, the entire unrecognized obligation upon adoption was recorded in 1992, resulting in an after-tax charge of \$482 million. Postretirement health care and life insurance expenses increased by \$71 million in 1992 relating to this new accounting. The adoption of FAS 109 resulted in a credit to earnings of \$160 million representing recognition of previously unrecognized tax benefits, net of valuation allowances. The first three quarters' financial results of 1992 have been restated to reflect these accounting changes as of January 1, 1992.

The Financial Accounting Standards Board issued Statement of Financial Accounting Standards No. 112 (FAS 112), "Employers' Accounting for Postemployment Benefits," in November 1992. FAS 112 requires that the liability for certain postemployment benefits, including salary continuation, supplemental unemployment benefits and job training, be recognized over the employees' service lives when certain conditions are met. The effective date for required adoption is for fiscal years beginning after December 15, 1993. Management does not believe that the adoption of this new accounting will have a significant impact on the Corporation's results of operations.

### Environmental Matters

The Corporation has operations in several lines of business which involve the use, treatment, storage and

disposal of substances regulated under various environmental protection laws. In regard to these operations, the Corporation had expenditures related to environmental matters of \$82 million in 1992, \$57 million in 1991 and \$48 million in 1990. These expenditures are expected to range between \$100 million and \$150 million in each of the next two years.

The Corporation is a potentially responsible party for environmental remediation and related expenditures at 79 federal Superfund sites, many of which relate to formerly-owned businesses. The Corporation's share of past expenditures at these Superfund sites has been \$30 million. The Corporation's share of future remediation and related expenditures at these sites is estimated to be in the range of \$100-\$150 million, and adequate reserves have been established. In addition, the Corporation has adequately provided for its share of future remediation and related expenditures at other known sites for which it may have some remediation responsibility.

The nature of the above matters makes it difficult to estimate the exact timing and ultimate amount of future environmental expenditures. Also, the Corporation has instituted legal proceedings against its insurers seeking insurance coverage for remediation and related expenditures. These proceedings are expected to last several years. No prediction can be made as to the outcome of these proceedings. The above uncertainties notwithstanding, the Corporation believes that expenditures necessary to comply with the present regulations governing environmental protection will not have a material effect upon its capital expenditures, competitive position, financial position or results of operations.

Late in 1990, amendments to the Clean Air Act were enacted. Since not all regulations implementing the provisions of these amendments have been issued, the Corporation is currently unable to estimate the nature or level of future expenditures that may be required to comply with the new law.

## Other Contingencies

In June 1989, Sikorsky Aircraft submitted to the Government a voluntary disclosure report describing the conditions which gave rise to a \$75 million downward adjustment of progress payments in April 1988. Representatives of the Government have been investigating the matter since that time. In addition, the Corporation believes that an employee of the Company has filed a "qui tam" action under the Civil False Claims Act based on matters that he became aware of while working on the Corporation's investigation of this matter. Recently, the Civil Division of the Justice Department has stated that it would accept \$370 million in settlement of the Corporation's liability under the Civil False Claims Act, and a federal grand jury in Connecticut has subpoenaed Corporation employees to appear and testify. The Corporation has made an estimate of its liability for this matter based on available information, and has established a reserve based on its estimate. The Corporation is unable to predict the timing of any Government claim or otherwise to assess loss exposure in excess of amounts accrued. The Corporation is currently negotiating with the Department of Justice in an attempt to resolve this matter. If the Corporation is unable to negotiate a satisfactory settlement, it intends to litigate.

The Corporation believes that, in light of the current government contracting environment, it will be the subject of one or more governmental investigations in the foreseeable future. If the Corporation or one of its business units were charged with wrongdoing as a result of any of these investigations, the Corporation or one of its business units could be suspended from bidding on or receiving awards of new government contracts pending the completion of legal proceedings. If convicted or found liable, the Corporation could be fined and debarred from new government contracting for a period generally not to exceed three years. Any contracts found to be tainted by fraud could be voided by the Government.

## Comparative Stock Data

	1992			1991		
	High	Low	Dividend	High	Low	Dividend
Common Stock						
First Quarter	56 <sup>5</sup> / <sub>8</sub>	49	\$.45	51	43 <sup>1</sup> / <sub>4</sub>	\$.45
Second Quarter	56	50 <sup>1</sup> / <sub>4</sub>	.45	50	43 <sup>3</sup> / <sub>8</sub>	.45
Third Quarter	57 <sup>1</sup> / <sub>4</sub>	47 <sup>3</sup> / <sub>4</sub>	.45	48 <sup>7</sup> / <sub>8</sub>	43 <sup>5</sup> / <sub>8</sub>	.45
Fourth Quarter	49	42 <sup>1</sup> / <sub>4</sub>	.45	54 <sup>1</sup> / <sub>4</sub>	42 <sup>5</sup> / <sub>8</sub>	.45

The Corporation's Common Stock is listed on the New York Stock Exchange. The high and low prices are based on the Composite Tape. There were 32,600 Common shareowners of record at December 31, 1992.



# Five-Year Summary

## United Technologies Corporation

In Millions of Dollars (except per share amounts)

	1992	1991	1990	1989	1988
<b>For the Year</b>					
Sales	\$ 21,641	\$ 20,840	\$ 21,442	\$ 19,532	\$ 18,000
Percent to United States Government	21%	21%	22%	24%	26%
Research and development	1,219	1,140	1,026	1,021	935
Restructuring provision	85	1,275	—	—	149
Income (loss) before cumulative effect of accounting principle changes	35	(1,021)	751	702	659
Net income (loss)	(287)	(1,021)	751	702	659
Earnings (loss) applicable to Common Stock	(329)	(1,083)	715	687	659
Earnings (loss) per share before cumulative effect of accounting principle changes:					
Primary	(.05)	(8.91)	5.91	5.34	5.05
Fully diluted	(.05)	(8.91)	5.53	5.20	5.05
Earnings (loss) per share:					
Primary	(2.67)	(8.91)	5.91	5.34	5.05
Fully diluted	(2.67)	(8.91)	5.53	5.20	5.05
Cash dividends on Common Stock	222	219	218	206	202
Per share	1.80	1.80	1.80	1.60	1.55
Average number of shares of Common Stock outstanding (thousands):					
Primary	123,238	121,537	120,845	128,693	130,608
Fully diluted	137,157	136,012	133,192	133,840	130,608
Return on average common shareowners' equity, after tax	(8.7)%	(20.9)%	14.5%	14.2%	14.6%
<b>At Year End</b>					
Net working capital	\$ 1,064	\$ 2,354	\$ 3,061	\$ 2,131	\$ 3,040
Current asset ratio	1.2 to 1	1.4 to 1	1.5 to 1	1.3 to 1	1.6 to 1
Total assets	15,928	15,985	15,918	14,598	12,748
Short-term borrowings	377	292	342	1,281	324
Long-term debt, including current portion	2,769	3,101	3,220	2,312	1,904
Debt to total capitalization	48%	46%	40%	43%	32%
ESOP Preferred Stock, net	151	126	81	—	—
Shareowners' equity	3,370	3,961	5,343	4,739	4,822
Equity per common share	27.23	32.49	44.10	39.14	36.88
Business backlog	21,175	20,700	20,875	20,125	16,875
Number of employees:					
United States	91,400	98,000	108,100	115,100	109,900
International:					
Europe	40,600	41,800	38,200	38,300	33,400
Other	46,000	45,300	46,300	48,000	43,500
Total	178,000	185,100	192,600	201,400	186,800
Number of common shareowners	32,600	35,400	37,200	39,500	42,600

Equity per common share is based on shares outstanding at each year end.

See Note 2 of Notes to Financial Statements for discussion of 1992 accounting changes.

For Pratt and Whitney, backlog is based on the terms of firm orders received and does not include discounts granted directly to airline and other customers.





The financial statements of United Technologies Corporation and subsidiaries, and all other information presented in this Annual Report, are the responsibility of the management of the Corporation. The financial statements have been prepared in accordance with generally accepted accounting principles.

Management is responsible for the integrity and objectivity of the financial statements, including estimates and judgments reflected in them. It fulfills this responsibility primarily by establishing and maintaining accounting systems and practices adequately supported by internal accounting controls. These controls include the selection and training of management and supervisory personnel; maintenance of an organizational structure providing for delegation of authority and establishment of responsibilities; communication of requirements for compliance with approved accounting, control and business practices throughout the organization; business planning and review; and a program of internal audit. Management believes the internal accounting controls in use provide reasonable assurance that the Corporation's assets are safeguarded, that transactions are executed in accordance with management's authorizations, and that the financial records are reliable for the purpose of preparing financial statements.

Independent accountants are elected annually by the Corporation's shareowners to audit the financial statements in accordance with generally accepted auditing standards. Their report appears in this Annual Report. Their audits, as well as those of the Corporation's internal audit department, include a review of internal accounting controls and selective tests of transactions.

The Audit Review Committee of the Board of Directors, consisting of six directors who are not officers or employees of the Corporation, meets regularly with management, the independent accountants and the internal auditors, to review matters relating to financial reporting, internal accounting controls and auditing.

To the Shareowners of United Technologies Corporation

In our opinion, the accompanying consolidated balance sheet and the related consolidated statements of operations, of changes in shareowners' equity and of cash flows present fairly, in all material respects, the financial position of United Technologies Corporation and its subsidiaries at December 31, 1992 and 1991, and the results of their operations and their cash flows for each of the three years in the period ended December 31, 1992, in conformity with generally accepted accounting principles. These financial statements are the responsibility of the Corporation's management; our responsibility is to express an opinion on these financial statements based on our audits. We conducted our audits of these statements in accordance with generally accepted auditing standards which require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements, assessing the accounting principles used and significant estimates made by management, and evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for the opinion expressed above.

As discussed in Note 2, the Corporation changed its methods of accounting for postretirement benefits other than pensions and for income taxes in 1992.

A handwritten signature in cursive script, likely reading "Price Waterhouse".

One Financial Plaza  
Hartford, Connecticut  
January 25, 1993

A handwritten signature in cursive script, likely reading "Robert F. Daniell".

Robert F. Daniell  
Chairman and Chief  
Executive Officer

A handwritten signature in cursive script, likely reading "George David".

George David  
President and Chief  
Operating Officer

# Consolidated Statement of Operations

United Technologies Corporation

In Millions of Dollars (except per share amounts)

Years Ended December 31,

## Revenues

	1992	1991	1990
Sales	\$21,641	\$20,840	\$21,442
Financing revenues and other income, less other deductions	391	422	346
	<u>22,032</u>	<u>21,262</u>	<u>21,788</u>

## Costs and Expenses

Cost of goods and services sold	16,915	16,387	16,015
Research and development	1,219	1,140	1,026
Selling, service and administrative	3,331	3,012	3,094
Interest	282	339	362
Restructuring provision	85	1,275	—
	<u>21,832</u>	<u>22,153</u>	<u>20,497</u>
Income (loss) before income taxes and minority interests	200	(891)	1,291
Income taxes	77	75	479
Income (loss) before minority interests	123	(966)	812
Less-Minority interests in subsidiaries' earnings	88	55	61
Income (loss) before cumulative effect of accounting principle changes	35	(1,021)	751
Cumulative effect of changes in accounting principles for:			
Income taxes	160	—	—
Postretirement benefits other than pensions	(482)	—	—
Net Income (Loss)	<u>\$ (287)</u>	<u>\$ (1,021)</u>	<u>\$ 751</u>
Preferred Stock Dividend Requirement	<u>\$ 42</u>	<u>\$ 62</u>	<u>\$ 36</u>
Earnings (Loss) Applicable to Common Stock	<u>\$ (329)</u>	<u>\$ (1,083)</u>	<u>\$ 715</u>

## Per Share of Common Stock:

### Primary:

Earnings (loss) before cumulative effect of accounting principle changes	\$ (.05)	\$(8.91)	\$5.91
Cumulative effect of changes in accounting principles for:			
Income taxes	1.29	—	—
Postretirement benefits other than pensions	(3.91)	—	—
Earnings (Loss)	<u>\$(2.67)</u>	<u>\$(8.91)</u>	<u>\$5.91</u>

### Fully Diluted:

Earnings (loss) before cumulative effect of accounting principle changes	\$ (.05)	\$(8.91)	\$5.53
Cumulative effect of changes in accounting principles for:			
Income taxes	1.29	—	—
Postretirement benefits other than pensions	(3.91)	—	—
Earnings (Loss)	<u>\$(2.67)</u>	<u>\$(8.91)</u>	<u>\$5.53</u>

See accompanying Notes to Financial Statements



# Consolidated Balance Sheet

United Technologies Corporation

In Millions of Dollars	December 31,	
	1992	1991
<b>Assets</b>		
Cash and short-term cash investments	\$ 354	\$ 523
Accounts receivable (net of allowance for doubtful accounts of \$447 and \$141)	3,135	3,426
Future income tax benefits	802	913
Inventories and contracts in progress	5,095	5,786
Less-Progress payments and billings on contracts in progress	(1,587)	(1,884)
Prepaid expenses	302	167
Total Current Assets	8,101	8,931
Investments and receivables due after one year	416	487
Customer financing assets	647	670
Fixed assets (net of accumulated depreciation of \$4,928 and \$4,626)	4,602	4,607
Future income tax benefits	783	—
Deferred charges:		
Costs in excess of net assets of acquired companies (net of accumulated amortization of \$230 and \$203)	577	630
Prepaid pension costs and other	802	660
	1,379	1,290
<b>Total Assets</b>	<b>\$15,928</b>	<b>\$15,985</b>
<b>Liabilities and Shareowners' Equity</b>		
Short-term borrowings	\$ 377	\$ 292
Accounts payable	2,097	1,839
Accrued salaries, wages and employee benefits	945	943
Accrued restructuring costs	435	488
Other accrued liabilities	2,056	1,758
Long-term debt - currently due	411	198
Income taxes currently payable	232	442
Advances on sales contracts	484	617
Total Current Liabilities	7,037	6,577
Deferred income taxes	186	230
Long-term debt	2,358	2,903
Deferred pension and postretirement benefit obligation	1,395	399
Other long-term liabilities	1,085	1,454
Commitments and contingent liabilities (Notes 5 and 13)		
Minority interests in subsidiary companies	346	335
Series A ESOP Convertible Preferred Stock, \$1 par value (Authorized-20,000,000 shares)		
Outstanding-12,661,738 and 12,896,198 shares	836	852
ESOP deferred charge and note receivable	(685)	(726)
	151	126
Shareowners' Equity:		
Capital Stock:		
Preferred Stock, \$1 par value (Authorized - 230,000,000 shares; none issued and outstanding)	—	—
Common Stock, \$5 par value (Authorized - 500,000,000 shares)		
Issued-136,438,880 and 134,570,235 shares	1,965	1,878
Cost of 12,664,188 and 12,672,108 common shares in treasury	(677)	(677)
Retained earnings	2,247	2,787
Deferred foreign currency translation adjustments	(135)	(27)
Minimum pension liability adjustment	(30)	—
<b>Total Shareowners' Equity</b>	<b>3,370</b>	<b>3,961</b>
<b>Total Liabilities and Shareowners' Equity</b>	<b>\$15,928</b>	<b>\$15,985</b>

See accompanying Notes to Financial Statements



# Consolidated Statement of Cash Flows

United Technologies Corporation

In Millions of Dollars

Years Ended December 31,

	1992	1991	1990
<b>Cash flows from operating activities:</b>			
Net income (loss)	\$ (287)	\$(1,021)	\$ 751
Adjustments to reconcile net income (loss) to net cash flows from operating activities:			
Restructuring provision	85	1,275	—
Environmental remediation provision, less portion in current liabilities	39	291	—
Depreciation and amortization	852	764	700
(Increase) decrease in:			
Accounts receivable	239	302	(425)
Inventories, net of progress payments	328	168	(182)
Prepaid expenses	(135)	96	12
Increase (decrease) in:			
Accounts and taxes payable, and accrued liabilities	359	501	605
Deferred income taxes and future income tax benefits	(626)	(346)	(141)
Noncurrent postretirement benefit obligation	808	—	—
Advances on sales contracts	(133)	84	8
Restructuring liabilities	(354)	(208)	—
Environmental liabilities	(52)	(41)	—
Minority interests in subsidiaries' earnings	88	55	61
Gains from dispositions of business units	(16)	—	(91)
Other, net	8	(30)	35
<b>Net Cash Flows from Operating Activities</b>	<b>1,203</b>	<b>1,890</b>	<b>1,333</b>
<b>Cash flows from investing activities:</b>			
Purchase of fixed assets	(920)	(1,048)	(1,200)
Sale of fixed assets	95	64	79
Increase in customer financing assets	(202)	(81)	(337)
Decrease in customer financing assets	—	74	5
Investments - other companies	29	(31)	5
Acquisitions of business units	—	(7)	—
Dispositions of business units	64	—	305
Other, net	8	1	—
<b>Net Cash Flows from Investing Activities</b>	<b>(926)</b>	<b>(1,028)</b>	<b>(1,143)</b>
<b>Cash flows from financing activities:</b>			
Issuance of long-term debt	13	509	684
Repayments of long-term debt	(355)	(690)	(437)
Increase (decrease) in short-term borrowings	85	(64)	(929)
Collection of \$660 million ESOP note receivable	—	—	660
Decrease in ESOP note receivable and debt guarantee, net of \$16 million, \$7 million and \$3 million ESOP Preferred Stock retirements	25	45	81
Common and Preferred Stock purchases	—	—	(83)
Common Stock issued for employee stock plans and other	87	28	77
Dividends paid on Common and Preferred Stocks	(264)	(281)	(254)
Other, net	(26)	(64)	(54)
<b>Net Cash Flows from Financing Activities</b>	<b>(435)</b>	<b>(517)</b>	<b>(255)</b>
Effect of foreign exchange rate changes on cash and short-term cash investments	(11)	(23)	(1)
<b>Net Increase (Decrease) in Cash and Short-Term Cash Investments</b>	<b>\$ (169)</b>	<b>\$ 322</b>	<b>\$ (66)</b>
<b>Supplemental Disclosure of Cash Flow Information:</b>			
Interest paid, net of amounts capitalized	\$ 293	\$ 330	\$ 358
Income taxes paid	403	436	390
<b>Non-cash investing and financing activities:</b>			
Assets of businesses acquired	—	191	—
Liabilities of businesses acquired	—	155	—
Assets of businesses sold	64	—	409
Liabilities of businesses sold	16	—	157

In 1990 and 1989, the Corporation issued 2.9 million and 10.2 million shares, respectively, of a new series of preferred stock to a newly established Employee Stock Ownership Plan (ESOP) in exchange for promissory notes aggregating \$202 million and \$660 million, respectively. In 1990, the \$660 million promissory note was repaid to the Corporation with proceeds from permanent financing guaranteed by the Corporation. See Note 11. The Corporation also refinanced \$252 million of debt in connection with the acquisition of Sheller-Globe.

See accompanying Notes to Financial Statements



# Consolidated Statement of Changes In Shareowners' Equity

United Technologies Corporation

	In Millions of Dollars			
	Common Stock	Treasury Stock	Retained Earnings	Other
<b>Balance December 31, 1989</b>	<b>\$1,773</b>	<b>\$ (594)</b>	<b>\$3,596</b>	<b>\$ (35)</b>
Issued under employee incentive plans, and related tax benefit (1,734,364 shares of Common Stock, net of 374,184 shares purchased and reissued)	77		(4)	
Redemption and purchase of 9,036 shares of Preferred Stock				(1)
Purchase of 1,670,008 shares of Common Stock		(83)		
Net income			751	
Dividends on – Common Stock (\$1.80 per share)			(218)	
– ESOP Preferred Stock (\$4.80 per share), net of income tax benefits of \$23 million			(36)	
Deferred foreign currency translation adjustments:				
Translation and hedging adjustments, net of income tax benefits of \$11 million				127
Sale of foreign investments				(10)
<b>Balance December 31, 1990</b>	<b>1,850</b>	<b>(677)</b>	<b>4,089</b>	<b>81</b>
Issued under employee incentive plans, with no tax benefit (742,147 shares of Common Stock, net of 25,761 shares purchased and reissued)	28			
Net loss			(1,021)	
Dividends on – Common Stock (\$1.80 per share)			(219)	
– ESOP Preferred Stock (\$4.80 per share), with no tax benefit			(62)	
Deferred foreign currency translation adjustments:				
Translation and hedging adjustments, with no tax benefit				(107)
Sale of foreign investments				(1)
<b>Balance December 31, 1991</b>	<b>1,878</b>	<b>(677)</b>	<b>2,787</b>	<b>(27)</b>
Issued under employee incentive plans, and related tax benefit (1,868,645 shares of Common Stock, net of 160,002 shares purchased and reissued)	87		(1)	
Redemption of Common Stock Rights			(12)	
Net loss			(287)	
Dividends on – Common Stock (\$1.80 per share)			(222)	
– ESOP Preferred Stock (\$4.80 per share), net of income tax benefits of \$19 million			(42)	
– Recognition of previously unrecognized tax benefit on Preferred Stock dividends			24	
Deferred foreign currency translation adjustments:				
Translation and hedging adjustments, including income taxes of \$12 million				(108)
Minimum pension liability adjustment, net of income tax benefits of \$19 million				(30)
<b>Balance December 31, 1992</b>	<b>\$1,965</b>	<b>\$ (677)</b>	<b>\$2,247</b>	<b>\$(165)</b>

See accompanying Notes to Financial Statements

## 1 Note

### Summary of Accounting Principles

**Principles of Consolidation:** The consolidated financial statements include the accounts of the Corporation and its subsidiaries. International operating subsidiaries are included generally on the basis of fiscal years ending November 30. All material intercompany transactions have been eliminated.

**Revenue Recognition:** Sales under government and commercial fixed-price contracts and government fixed-price-incentive contracts are recorded at the time deliveries are made or, in some cases, on a percentage of completion basis. Sales under cost-reimbursement contracts are recorded as work is performed and billed. Sales of commercial aircraft engines sometimes require significant participation by the Corporation in aircraft financing arrangements; when appropriate, such sales are accounted for as operating leases. Sales under elevator and escalator installation and modernization contracts are accounted for under the percentage of completion method. Service contract revenues are recorded as sales when earned.

Prospective losses, if any, on contracts are provided for when the losses become anticipated. Loss provisions are based upon any anticipated excess of inventoriable manufacturing or engineering cost and estimated warranty costs over the net revenue from the products contemplated by the specific order.

**Inventories and Contracts in Progress:** Inventories and contracts in progress are stated at the lower of cost or estimated realizable value. Inventories consist primarily of raw materials and work in process. Materials in excess of requirements for contracts and orders currently in effect or anticipated have been eliminated. A considerable portion of inventories is based on cost standards which are adjusted to reflect approximate current costs. The remainder of inventories is stated either at average cost or at actual cost accumulated against specific contracts or orders or, in the case of a substantial portion of inventories in the Building Systems and Automotive businesses, at last-in, first-out (LIFO) cost. Manufacturing tooling costs are charged to inventories or to fixed assets depending upon their nature, general applicability and useful lives. Tooling costs included in inventory are charged to cost of sales based on usage, generally within two years after they enter productive use. All other manufacturing costs are allocated to current production; no such costs are deferred and assigned to future production.

Contracts in progress relate to elevator and escalator contracts and include standard cost of manufactured components, accumulated installation costs and estimated earnings on uncompleted contracts.

**Depreciation and Amortization:** Provisions for depreciation of plant and equipment related to the Corporation's aerospace operations have generally been made using accelerated methods. Provisions for depreciation of other plant and equipment have generally been made using the straight-line method. Estimated useful lives generally range from 30 to 50 years for buildings and improvements, from 8 to 20 years for machinery and equipment, and from 5 to 10 years for office equipment. Improvements to leased property are amortized over the life of the lease.

**Environmental Activities:** Provisions for environmental remediation activities are recorded when assessments are made, remedial efforts are probable and related amounts can be reasonably estimated; potential insurance reimbursements are not recorded. The Corporation periodically assesses its environmental liabilities through reviews of contractual commitments, site assessments, feasibility studies and formal remedial design and action plans.

**Research and Development and Other Costs:** Research and development costs not specifically covered by contracts and those related to the Corporation-sponsored share of research and development activity in connection with cost-sharing arrangements are charged to operations as incurred. General and administrative expenses also are charged to operations as incurred. Costs pertaining to fulfillment of the Corporation's warranty and service policies and product guarantees are estimated on the basis of past experience and current product performance and, where believed to be significant and reasonably predictable in amount, are accrued at the time products are sold.

**Goodwill:** Costs in excess of values assigned to the underlying net assets of acquired companies are included in deferred charges and are generally being amortized over periods ranging from 25 to 40 years.

**Hedging Activity:** The Corporation enters into a variety of interest rate futures, options, currency swaps and forward contracts in its management of interest rate and foreign currency committed exposures. Realized and unrealized gains and losses are deferred and either recognized as interest expense over the borrowing period or recognized in Shareowners' Equity, depending on the exposure hedged.

The Corporation enters into forward foreign exchange contracts to hedge foreign currency denominated receivables and payables. Such contracts generally have maturities of one year or less and the counterparties are typically major international financial institutions. Cash flows attributable to the forward foreign exchange contracts are generally included with the cash flows from the associated hedged receivables or payables.

**Income Taxes:** Provisions for income taxes are based upon income and expenses recorded in accordance with the Corporation's regular



accounting practices and as shown in the financial statements. The income tax effects of differences in the time when items of income and expense are reflected in accordance with such regular accounting practices and the time they are recognized for income tax purposes are shown in the balance sheet as future income tax benefits or as deferred income taxes, as appropriate.

**Earnings Per Share:** Primary earnings per share computations are based on the average number of shares of common stock outstanding during the year. Fully diluted earnings per share reflect the maximum dilution of per share earnings, if applicable, which would have occurred if all the ESOP Convertible Preferred Stock of the Corporation had been converted as of the date of issue. Each share of the ESOP preferred stock is convertible into one share of common stock. A reduction in earnings applicable to common shares is required in the calculation of fully diluted earnings per share representing the Corporation's assumed additional contribution to the ESOP to enable it to meet its debt repayment responsibilities were the preferred dividends not available for this purpose.

**Current Assets and Liabilities:** Current assets and current liabilities include items expected to be, or which may be, realized or liquidated during the next year.

**Cash and Cash Equivalents:** Short-term cash investments are highly liquid in nature and considered cash equivalents within the requirements of Statement of Financial Accounting Standards No. 95, "Statement of Cash Flows."

## Note 2

### Accounting and Reporting Changes

Effective January 1, 1992, the Corporation adopted Statement of Financial Accounting Standards No. 106 (FAS 106), "Employers' Accounting for Postretirement Benefits Other Than Pensions" using the immediate recognition transition option. The new retiree benefits accounting disclosures for 1992 appear in Note 11. The after-tax cumulative effect attributable to prior years as of January 1, 1992 for this change in accounting for retiree health care and life insurance benefits reduced 1992 earnings by \$482 million (\$3.91 per share). Prior to 1992 the Corporation recognized the cost of providing these benefits as premiums were incurred. FAS 106 no longer allows this approach, requiring instead the recognition of a liability as the benefits are earned during the employees' applicable years of service. The effect on Income Before Income Taxes and Minority Interests for 1992 was a reduction of \$71 million. In accordance with FAS 106, prior years' financial statements have not been restated.

Effective January 1, 1992, the Corporation adopted Statement of Financial Accounting Standards No. 109 (FAS 109), "Accounting for Income Taxes." The Statement requires the liability method of accounting for income taxes rather than the deferred method previously used. The cumulative effect attributable to prior years as of January 1, 1992 for this change in accounting for income taxes

increased 1992 earnings by \$160 million (\$1.29 per share). Prior years' financial statements have not been restated.

## Note 3

### Restructuring and Employee Severance Plans

On January 20, 1992, the Corporation's Board of Directors approved restructuring plans which resulted in a \$1.275 billion pre-tax (\$1.21 billion after-tax, or \$10.06 per share) charge to 1991 operations. The restructuring actions included eliminating approximately 13,900 jobs, closing or consolidating facilities, and improving design, engineering and manufacturing processes. The restructuring charge includes \$423 million for employee severance and \$852 million for facility closure, consolidation and process improvements.

In the fourth quarter of 1992, the Corporation recorded a provision for restructuring of \$85 million. This reflects the need to further reduce headcount in the Power and Flight Systems segments due to the impact of the state of the commercial airline industry on the business activities of these segments.

## Note 4

### International Operations

A substantial portion of the Corporation's revenues and assets is attributable to international operations. The Corporation has significant manufacturing facilities in Canada, Italy, France, Japan, South Korea, Spain, Australia, Mexico, the United Kingdom and Germany and operations of lesser size in a number of other countries. At December 31, 1992, the investment (identifiable assets) in any single country other than the United States did not exceed 5% of the Corporation's total identifiable assets, except for investments in Canada which amounted to slightly more than 5% of total identifiable assets.

Amounts included in the accompanying consolidated financial statements associated with operations outside the United States consist of the following:

In Millions of Dollars	1992	1991	1990
Sales	\$8,396	\$7,720	\$7,534
Net income	254	179	410
Assets	4,999	5,096	4,693
Liabilities	2,395	2,758	2,446
Minority interests	340	328	322

The financial position and results of operations of substantially all of the Corporation's significant foreign subsidiaries are measured using local currency as the functional currency. The aggregate effects of translating the financial statements of these subsidiaries are deferred as a separate component of Shareowners' Equity.

At December 31, 1992, the Corporation had \$533 million notional principal amount of outstanding currency swaps and forward exchange contracts to hedge its foreign net investment exposures. In addition, at December 31, 1992 and 1991, the Corporation had \$1.7



billion and \$1.9 billion, respectively, of forward foreign exchange contracts hedging other foreign currency exposures.

Earnings were credited or charged with foreign exchange gains (losses), including gains and losses of operations in highly inflationary economies, of \$6 million, \$(22) million and \$(21) million in 1992, 1991 and 1990, respectively.

## Note 5

### Airline Industry and Customer Financing Assets

The Corporation has significant receivables and other financing assets which result from its business activities with commercial airline industry customers totaling \$1,974 million and \$2,179 million at December 31, 1992 and 1991, respectively. Allowances for possible losses relating to these assets total \$332 million and \$47 million in 1992 and 1991, respectively. The 1992 amount includes the provision of \$285 million recorded in the fourth quarter. The commercial airline industry and customer financing asset amounts primarily include assets of Pratt & Whitney, Hamilton Standard and UT Finance Corporation.

Customer financing assets consist of the following:

In Millions of Dollars	1992	1991
Notes and accounts receivable	\$365	\$249
Leases receivable, less unearned income of \$13 and \$12	73	88
Products under lease	255	388
	<u>693</u>	<u>725</u>
Less: receivables due within one year	(46)	(55)
	<u>\$647</u>	<u>\$670</u>

Scheduled maturities, in millions of dollars, of amounts included in accounts and notes and leases receivable due after one year for the next five years are \$88 in 1994, \$34 in 1995, \$166 in 1996, \$23 in 1997 and \$81 in 1998 and thereafter.

As of December 31, 1992, customer aircraft financing activities are conducted principally through UT Finance Corporation, its two consolidated subsidiaries and certain other customer financing operations.

The competitive commercial aircraft engine market often requires customer financing commitments. These commitments may be in the form of guarantees, secured debt or lease financing. The Corporation's customer financing activities include leasing aircraft under operating lease agreements and subleasing the aircraft to customers, primarily under lease agreements cancelable within one to four years upon notice by the customer. At December 31, 1992, rental commitments under those long-term noncancelable leases aggregated \$360 million (\$30 million in each of the years 1993 through 1997). At December 31, 1992, the Corporation had commitments to finance or arrange financing for approximately \$2.0 billion of commercial aircraft. The Corporation cannot currently predict the extent to which these commitments will be utilized, since certain customers may be

able to obtain more favorable terms using traditional financing sources. From time to time, the Corporation also arranges for third party investors to assume a portion of its commitments. However, should all current commitments be exercised as scheduled, the maximum amounts that will be disbursed are as follows: \$545 million in 1993, \$190 million in 1994, \$400 million in 1995, \$400 million in 1996, \$400 million in 1997 and \$80 million in 1998 and beyond. If exercised, the financing arrangements will be secured by assets with fair values exceeding the financed amounts.

At December 31, 1992, the Corporation had approximately \$513 million of residual value and other guarantees related to various commercial aircraft engine customer financing arrangements. These guarantees may extend for fifteen years or more and may be used by the customers to obtain more favorable financing terms than would otherwise be available. Where applicable, the estimated fair market values of the assets securing these guarantees equaled or exceeded the related guarantee amount, after considering existing reserves of \$77 million, at December 31, 1992. As with financing commitments, the Corporation may arrange for third party investors to assume a portion of its guarantees.

## Note 6

### Inventories and Contracts in Progress

Inventories and contracts in progress at December 31, 1992 consist of inventories of \$4.018 million (\$4,474 million at December 31, 1991) and elevator and escalator contracts in progress of \$1,077 million (\$1,312 million at December 31, 1991).

The methods of accounting followed by the Corporation do not permit classification of inventories by categories of finished goods, work in process and raw materials. The Corporation's sales contracts in many cases are long-term contracts expected to be performed over periods exceeding twelve months. Approximately 60% (61% at December 31, 1991) of the total inventories and contracts in progress has been acquired or manufactured under such long-term contracts. It is impracticable for the Corporation to determine the amounts of inventory scheduled for delivery under long-term contracts within the next twelve months.

The principal elements of cost included in inventories are materials, purchased components, direct labor and manufacturing overhead (engineering overhead in the case of engineering contracts). Tooling and other costs are an insignificant portion of inventories.

A substantial portion of the Corporation's inventories in its Building Systems and Automotive businesses is valued under the LIFO method. If these inventories had been valued at the lower of replacement value or cost under the first-in, first-out method, they would have been higher by \$148 million at December 31, 1992 (\$139 million at December 31, 1991).

The book basis of LIFO inventories exceeded the tax basis of such inventories by approximately \$57 million at December 31, 1992 and 1991 resulting from the assignment of fair value to inventories



acquired in a business acquisition accounted for under the purchase method of accounting.

At December 31, 1992, progress payments, secured by lien, on United States Government contracts and billings on contracts in progress amounted to \$333 million (\$459 million at December 31, 1991) and \$1,254 million (\$1,425 million at December 31, 1991), respectively.

## Note 7

### Investments and Receivables Due After One Year

Investments and receivables due after one year consist of the following:

In Millions of Dollars	1992	1991
Receivables due after one year	\$216	\$267
Investments	200	220
	<u>\$416</u>	<u>\$487</u>

Current and long-term accounts receivable at December 31, 1992 and 1991 include approximately \$144 million and \$186 million, respectively, representing retainage under contract provisions and

amounts which are not presently billable because of lack of funding or final prices or contractual documents under government contracts or for other reasons. These items are expected to be collected in the normal course of business.

## Note 8

### Fixed Assets

In Millions of Dollars	1992	1991
Fixed Assets, at cost:		
Land	\$ 161	\$ 164
Buildings and improvements	2,620	2,456
Machinery, tools and equipment	6,206	6,005
Under construction	543	608
	<u>9,530</u>	<u>9,233</u>
Less: accumulated depreciation	(4,928)	(4,626)
	<u>\$ 4,602</u>	<u>\$ 4,607</u>

Depreciation expense was \$777 million, \$735 million and \$675 million in 1992, 1991 and 1990, respectively.

## Note 9

### Borrowings and Lines of Credit

The following summarizes the short-term borrowings, lines of credit and long-term debt of the Corporation and its subsidiaries. Short-term borrowings:

In Millions of Dollars	1992	1991
Foreign bank borrowings	\$253	\$289
Commercial paper and notes	124	3
	<u>\$377</u>	<u>\$292</u>

Long-term debt:

Type of Issue	1992 Debt		In Millions of Dollars	
	Weighted Average Interest Rate	Maturity	1992	1991
Denominated in U.S. Dollars:				
Notes and other debt	6.8%	1994-2021	\$1,174	\$1,609
Sinking fund debt	5.9%	1994-2016	142	219
Denominated in foreign currency:				
Notes and other debt	13.0%	1994-2014	95	96
Capital lease obligations	8.5%	1994-2002	394	392
ESOP debt guarantee	7.6%	1994-2009	553	587
Total long-term debt			<u>\$2,358</u>	<u>\$2,903</u>

Principal payments required on long-term debt for the next five years are \$411 million in 1993, \$226 million in 1994, \$146 million in 1995, \$216 million in 1996 and \$183 million in 1997.

The terms of the indentures relating to certain issues of long-term debt include provisions intended to restrict, under certain conditions, the availability of retained earnings for payment of dividends on the Common Stock. At December 31, 1992, all of the Corporation's retained earnings were free of such restrictions.

At December 31, 1992, the Corporation had entered into various interest rate swap contracts (including options thereon) related to approximately \$830 million of its outstanding borrowings. The expiration dates of the various contracts are tied to scheduled debt and capital lease obligation payment dates and extend to 2002.

**Capitalized interest:** During 1992, the Corporation and its consolidated subsidiaries capitalized \$52 million (\$70 million in 1991 and \$60 million in 1990) of interest, to be depreciated over the lives of the related fixed assets.

## Note 10

### Taxes on Income

The provision for income taxes for each of the three years ended December 31 comprises the following:

In Millions of Dollars	1992	1991*	1990*
Current:			
United States:			
Federal	<b>\$(145)</b>	\$138	\$262
State	<b>9</b>	48	73
Foreign	<b>263</b>	246	280
	<u><b>127</b></u>	<u>432</u>	<u>615</u>
Deferred:			
United States:			
Federal	<b>(19)</b>	(275)	(126)
State	<b>(44)</b>	(31)	(28)
Foreign	<b>(24)</b>	(51)	18
	<u><b>(87)</b></u>	<u>(357)</u>	<u>(136)</u>
	<u><b>40</b></u>	<u>\$ 75</u>	<u>\$479</u>
Benefits attributable to items credited to equity	<b>37</b>		
	<u><b>\$ 77</b></u>		

\*Prior years' amounts have not been restated to apply the provisions of FAS 109.

As discussed in Note 2, the Corporation adopted FAS 109 as of January 1, 1992, and the cumulative effect of this change is reported in the 1992 Consolidated Statement of Operations.

Deferred income taxes represent the tax effects of transactions which are reported in different periods for financial and tax reporting purposes. These temporary differences are determined in accordance with FAS 109 and are more inclusive in nature than "timing differences" as determined under previously applicable accounting principles. Temporary differences and carryforwards which gave rise to a significant portion of deferred tax assets and liabilities at December 31, 1992 are as follows:

In Millions of Dollars

#### Deferred tax assets:

Tax depreciation and foreign capital allowances	<b>\$ (147)</b>
Capitalization of interest cost, less related depreciation	<b>(105)</b>
Adjustment of inventories and contract losses to tax basis	<b>304</b>
Provisions for warranty	<b>306</b>
Insurance and employee benefits	<b>468</b>
Restructuring provisions	<b>351</b>
Alternative minimum tax credits	<b>51</b>
Environmental remediation provisions	<b>199</b>
Federal, foreign and state tax loss carryforwards	<b>123</b>
Foreign tax credit carryforwards	<b>31</b>
Other items, net	<b>221</b>
Valuation allowance	<b>(217)</b>
Total deferred tax asset	<u><b>1,585</b></u>

#### Deferred tax liabilities:

Use of completed-contract method for reporting taxable income	<b>17</b>
Tax depreciation and foreign capital allowances	<b>109</b>
Capitalization of interest cost, less related depreciation	<b>23</b>
Insurance and employee benefits	<b>34</b>
Lease transactions, finance subsidiaries	<b>21</b>
Other items, net	<b>69</b>
Total deferred tax liability	<u><b>273</b></u>
Net deferred tax asset	<u><b>\$1,312</b></u>

Current and non-current deferred tax assets and liabilities within the same tax jurisdiction are offset for presentation in the consolidated balance sheet. Valuation allowances have been established for foreign tax credit carryforwards and for the effect of the alternative minimum tax. For foreign and state tax loss carryforwards, valuation allowances have been recorded to reduce the deferred tax assets to amounts expected to be realized.

Changes in deferred U.S. federal, state and foreign income taxes shown in the income tax provisions for 1991 and 1990 include the income tax effects of:

In Millions of Dollars	1991	1990
Use of completed-contract method for reporting taxable income	\$ (23)	\$ (50)
Tax depreciation and foreign capital allowances	(23)	14
Capitalization of interest cost, less related depreciation	11	9
Adjustment of inventories and contract losses to tax basis	7	(5)
Provisions for warranty	(34)	(13)
Insurance and employee benefits	(107)	(92)
Customer allowances	11	41
Restructuring provisions	(59)	—
Lease transactions, finance subsidiaries	14	15
Alternative minimum tax credits	—	11
Environmental remediation provisions	(102)	(31)
Other items, net	(52)	(35)
	<u>\$(357)</u>	<u>\$(136)</u>

The sources of income (loss) before income taxes were:

In Millions of Dollars	1992	1991	1990
United States	<b>\$(374)</b>	\$ (1,311)	\$ 559
Foreign	<b>574</b>	420	732
	<u><b>\$ 200</b></u>	<u>\$ (891)</u>	<u>\$ 1,291</u>

Deferred income taxes generally have not been provided on undistributed earnings of international subsidiaries, of \$1,048 million, which are included in consolidated retained earnings at December 31, 1992. A substantial portion of the undistributed earnings of the international subsidiaries has been reinvested, and the Corporation believes that income taxes otherwise payable upon repatriation of earnings not reinvested would be largely offset by available foreign tax credits.

Differences between effective income tax rates and the statutory U.S. federal income tax rates are as follows:

	1992	1991*	1990*
Statutory U.S. federal income tax rate	<b>34.0%</b>	(34.0%)	34.0%
State and local income taxes, net of federal tax benefit	<b>(9.6)</b>	1.3	2.3
Varying tax rates of consolidated subsidiaries (including Foreign Sales Corporation)	<b>(5.7)</b>	7.1	(0.5)
Amortization of excess purchase accounting and goodwill adjustments, without tax effect	<b>3.4</b>	0.4	0.2
Unused foreign tax credits	<b>15.6</b>	33.5	—
Other	<b>0.7</b>	0.1	1.1
Effective income tax rates	<u><b>38.4%</b></u>	<u>8.4%</u>	<u>37.1%</u>

Foreign tax credit carryforwards total \$31 million at December 31, 1992 and expire during the period 1993-1997. Federal, state and foreign tax loss carryforwards of \$986 million at December 31, 1992 expire during the period 1993-2007.

## Note 11

### Employee Benefit Plans

**Employee Pension Benefits:** The Corporation and its domestic subsidiaries have a number of defined benefit pension plans covering substantially all U.S. employees. Plan benefits are generally based on years of service and the employee's compensation during the last several years of employment. The Corporation's funding policy is based on an actuarially determined cost method allowable under Internal Revenue Service regulations. The funds are invested either in various securities by trustees or in insurance annuity contracts. Certain foreign subsidiaries have defined benefit pension plans or severance indemnity plans covering their employees. The Corporation accounts for the cost of its defined benefit plans in accordance with Statement of Financial Accounting Standards No. 87 (FAS 87), "Employers' Accounting for Pensions."

In addition to the defined benefit plans covering U.S. and foreign employees discussed above, the Corporation makes contributions to multiemployer plans (predominantly defined benefit plans) covering certain employees in some of its U.S. operations. Certain additional employees, primarily located in foreign countries, are covered by retirement arrangements which do not meet the reporting requirements of FAS 87.

Summarized below are the components of net periodic pension cost for defined benefit plans, net pension cost for multiemployer plans and other costs for pension and severance indemnity plans:

In Millions of Dollars	1992	1991	1990
<b>Defined benefit plans:</b>			
Service cost-benefits earned during the period	<b>\$ 195</b>	\$ 210	\$ 218
Interest cost on projected benefit obligation	<b>551</b>	524	493
Actual return on assets - investment losses/(gains)	<b>(286)</b>	(1,198)	425
Net amortization and deferral of actuarial (losses)/gains	<b>(433)</b>	508	(1,088)
Net periodic pension cost	<u><b>\$ 27</b></u>	<u>\$ 44</u>	<u>\$ 48</u>
<b>Net pension cost:</b>			
Multiemployer plans	<b>\$ 17</b>	\$ 21	\$ 23
Other costs	<b>\$ 11</b>	\$ 22	\$ 13

Summarized below is the funded status of the defined benefit pension plans and the related amounts that are recognized in the consolidated balance sheet at December 31:

\*Prior years' amounts have not been restated to apply the provisions of FAS 109.

	December 31, 1992		December 31, 1991	
	Assets Exceed Accumulated Benefits	Accumulated Benefits Exceed Assets	Assets Exceed Accumulated Benefits	Accumulated Benefits Exceed Assets
In Millions of Dollars				
Actuarial present value of benefit obligations:				
Vested	\$4,176	\$1,566	\$5,056	\$ 142
Nonvested	223	147	319	6
Accumulated benefit obligation	4,399	1,713	5,375	148
Effect of projected future salary increases	1,081	130	1,033	56
Projected benefit obligation for services rendered to date	5,480	1,843	6,408	204
Plan assets available for benefits	5,283	1,475	6,837	35
Plan assets in excess of (less than) projected benefit obligation	(197)	(368)	429	(169)
Unrecognized net loss (gain)	363	166	(260)	(2)
Prior service cost not yet recognized in net periodic pension cost	88	146	226	(7)
Unrecognized net (asset) obligation at transition	(148)	(11)	(241)	60
Additional minimum liability recognized	—	(207)	—	(9)
Prepaid pension cost (pension liability) included in deferred charges (deferred pension and postretirement benefit obligation)	\$ 106	\$ (274)	\$ 154	\$(127)

The pension funds are valued at September 30 of the respective years in the table above. Major assumptions used in the accounting for the defined benefit pension plans are shown in the following table. Net periodic pension cost is determined using these factors as of the end of the prior year, whereas the funded status of the plans uses only the first two factors as of the end of the current year.

	December 31,			
	1992	1991	1990	1989
Weighted-average discount rate	8.1%	8.6%	9.0%	8.5%
Rate of increase in future compensation	5.2%	6.1%	7.0%	7.0%
Expected long-term rate of return on assets	10.5%	10.5%	10.5%	10.5%

In accordance with the provisions of FAS 87 the Corporation recorded a minimum pension liability at December 31, 1992. This amount represents the excess of the accumulated benefit obligations over the fair value of plan assets and accrued pension liabilities. The liabilities have been offset by intangible assets to the extent possible. Because the asset recognized may not exceed the amount of unrecognized prior service cost, the balance of the liability at the end of the period is reported as a separate reduction to shareowners' equity, net of tax benefits.

Amounts are summarized as follows:

December 31, 1992	
In Millions of Dollars	
Additional minimum liability	\$207
Intangible assets	\$158
Reduction of shareowners' equity	30
Tax benefits	19

In 1991 and 1990, in accordance with FAS 88, the Corporation recognized net gains (losses) of \$(54) million and \$1 million, respectively. These financial impacts resulted from the reduction in the projected benefit obligations for certain employees affected by reductions in personnel at several operating units (1991 and 1990) and from enhanced early retirement benefits (1991).

Certain of the Corporation's international subsidiaries generally do not determine the actuarial value of accumulated benefits and the value of net assets on the basis shown above. For these plans, unfunded vested benefits as of December 31, 1992 and 1991 were insignificant. Unfunded liabilities for pension plans of certain international subsidiaries and for employee severance benefits, including those accruing to employees under foreign government regulations, are included in other long-term liabilities in the accompanying balance sheet.

**Employee Health Care and Insurance Benefits:** As discussed in Note 2, the Corporation adopted FAS 106 as of January 1, 1992. The Corporation elected to immediately recognize the cumulative effect of the change in accounting for postretirement benefits of \$482 million (net of income tax benefit of \$304 million) which represents the unfunded accumulated postretirement benefit obligation (APBO) existing at January 1, 1992. The effect of this change on 1992 operating results, after recording the cumulative effect for years prior to 1992, was to recognize an additional pretax expense of \$71 million. The Corporation expects to fund the benefit costs principally on a pay-as-you-go basis.

In situations where full-time employees retire from the Corporation between age 55 and age 65, most are eligible to receive, at a cost to the retiree equal to the Corporation's cost for an active employee, certain health care benefits identical to those available to active

employees. After attaining age 65, an eligible retiree's health care benefit coverage becomes coordinated with Medicare, with the retiree paying substantially all of the cost of the coverage. Certain retired employees of businesses acquired by the company are covered under other health care plans that differ from current plans in coverage, deductibles, and retiree contributions. In addition, certain retirees may elect, at retirement, to continue life insurance coverage of up to twice their annual base pay as of that date.

Summary information on the Corporation's plans is as follows:

In Millions of Dollars December 31, 1992

Accumulated postretirement benefit obligation:

Retirees	<b>\$ 433</b>
Fully eligible, active plan participants	<b>32</b>
Other active participants	<b>565</b>
	<b><u>1,030</u></b>
Less: plan assets at fair value	<b>(118)</b>
Postretirement benefit obligation in excess of plan assets	<b>912</b>
Unrecognized net loss	<b>(4)</b>
Accrued postretirement benefit cost	<b><u>\$ 908</u></b>

The components of net periodic postretirement benefit cost are as follows:

In Millions of Dollars December 31, 1992

Service cost of benefits earned	<b>\$ 35</b>
Interest cost on accumulated postretirement benefit obligation	<b>80</b>
Actual return on plan assets	<b>(10)</b>
Net periodic postretirement benefit cost	<b><u>\$105</u></b>

The discount rate used in determining the APBO was 8.1%. The expected long-term rate of return on plan assets used in determining the net periodic postretirement benefit cost was 8.35% in 1992. The assumed health care cost trend rate used in measuring the accumulated postretirement benefit obligation was 15% in 1992, declining by .75% per year to an ultimate rate of 8%.

If the health care cost trend rate assumptions were increased by 1%, the APBO as of December 31, 1992 would be increased by 10%. The effect of this change on the sum of the service cost and interest cost components of the net periodic postretirement benefit cost for 1992 would be an increase of 13%.

**Employee Incentive Plans:** On April 24, 1989, the Corporation's shareholders approved the Long-Term Incentive Plan (1989 Plan) under which shares of Common Stock may be sold or awarded to officers and key employees. The 1989 Plan in effect replaced the 1979 Long-Term Incentive Plan (1979 Plan). The 1989 Plan also had the effect of amending the terms of all grants and awards under the 1979 Plan that remain outstanding inasmuch as they shall be administered in accordance with the terms and provisions of the 1989 Plan.

The 1989 Plan authorized various types of market-based incentive and performance-based awards. The exercise price of an option, which will be set at the time of the grant, will not be less than the fair market value of the shares subject thereto on the date of grant. The maximum number of shares which may be utilized for awards granted during a given calendar year may not exceed 2% of the aggregate shares of Common Stock, Common Stock equivalents and Treasury shares as reported outstanding in the Annual Report on Form 10-K for the preceding fiscal year.

A summary of the transactions under all Plans for the three years ended December 31 follows:

	Stock Options		Other Incentive Awards
	Shares	Average Price	
<b>Outstanding - December 31, 1989</b>	<b>10,018,810</b>	<b>\$41.56</b>	<b>124,769</b>
Granted	427,950	\$50.05	238,149
Exercised/earned	(1,998,332)	\$39.94	(89,082)
Cancelled	(284,423)	\$43.86	(26,737)
<b>Outstanding - December 31, 1990</b>	<b>8,164,005</b>	<b>\$42.32</b>	<b>247,099</b>
Granted	1,438,054	\$48.92	654,816
Exercised/earned	(705,691)	\$33.21	(68,157)
Cancelled	(192,996)	\$47.88	(149,197)
<b>Outstanding - December 31, 1991</b>	<b>8,703,372</b>	<b>\$44.03</b>	<b>684,561</b>
Granted	1,618,726	\$50.28	640,595
Exercised/earned	(1,698,513)	\$38.26	(468,209)
Cancelled	(179,832)	\$48.49	(266,622)
<b>Outstanding - December 31, 1992</b>	<b><u>8,443,753</u></b>	<b><u>\$46.30</u></b>	<b><u>590,325</u></b>



At December 31, 1992, stock options for 6,130,005 shares of Common Stock were exercisable at an average price of \$44.98 per share.

At December 31, 1992, 8,688,753 shares of Common Stock were reserved for issuance under various employee incentive plans.

For 1992, \$58 million (\$54 million in 1991 and \$48 million in 1990) was charged to income with respect to employee incentive plans of the Corporation and certain of its subsidiaries, of which \$35 million (\$24 million in 1991 and \$34 million in 1990) was accrued under the Corporation's principal incentive compensation plan, and the remainder was accrued under the 1989 Plan and other plans.

**Employee Savings Plans:** In 1989, the Corporation established an Employee Stock Ownership Plan (ESOP) to serve as the vehicle for the Corporation's match of employee contributions within one of its existing savings plans. The Corporation's Board of Directors authorized 20,000,000 shares of preferred stock, par value \$1.00 per share, designated as Series A ESOP Convertible Preferred Stock, having a 7.38 percent dividend rate per annum. Each share of ESOP preferred stock is convertible into one share of common stock. In 1990 and 1989, the ESOP Trust acquired 2,900,000 and 10,153,847 shares of this new series of preferred stock, respectively, in exchange for individual promissory notes aggregating \$202 million and \$660 million, respectively. In 1990, the ESOP Trust arranged \$660 million of permanent financing guaranteed by the Corporation and repaid the note issued in 1989. The Corporation has no intention at this time of arranging permanent financing for the remaining balance of the 10.5% \$202 million promissory note.

The guarantee of the ESOP's debt resulted in the Corporation recording such debt in its consolidated balance sheet with a corresponding offset to the ESOP preferred stock. The Corporation is required to contribute sufficient funds, when combined with dividends paid on the ESOP preferred stock, to meet the ESOP trust's debt service requirements on the permanent financing and promissory note. In 1992 and 1991, the ESOP incurred interest expense aggregating \$58 million and \$62 million, respectively, on its outstanding indebtedness. In 1992, the ESOP made principal payments of \$33 million and \$8 million on its permanent financing and promissory note, respectively.

Shares of ESOP preferred stock are held by the ESOP Trustee with the number of shares allocated to each employee determined annually in accordance with a method approved by the Internal Revenue Service. To the extent that allocated shares are not sufficient to meet the matching requirement of the savings plan, the Corporation will contribute additional ESOP preferred stock, common stock or cash.

Shares allocated to employees generally may not be withdrawn until the employee's termination, disability, retirement or death. Upon withdrawal, shares of ESOP preferred stock must be converted into one share of the Corporation's common stock or, if the value of the common stock is less than the original cost of the ESOP preferred stock, the ESOP Trustee may require the Corporation to repurchase the ESOP preferred stock at its original cost. Because of the guaranteed value, the ESOP preferred stock is classified outside of permanent equity. In conjunction with the establishment of the ESOP, the Corporation purchased approximately 1.7 million shares and 10.4 million shares of its common stock in 1990 and 1989, respectively, at a combined average cost of \$53.48 per share to substantially provide for the conversion feature of the preferred stock.

Dividends on ESOP preferred stock are deductible for U.S. income tax purposes. Tax benefits available to the Corporation resulting from such dividends are applied as a reduction of the preferred stock dividends in the financial statements.

The ESOP preferred stock is redeemable, in whole or in part, generally at the option of the Corporation at redemption prices ranging from \$68.36-\$69.77 per share plus accrued and unpaid dividends. At December 31, 1992, the aggregate redemption value of the ESOP preferred stock was \$869 million.

Contributions to the ESOP together with the value of additional ESOP preferred stock, common stock or cash necessary to satisfy the savings plan matching requirement are charged to expense. The Corporation and a number of its subsidiaries have additional savings plans in which a portion of employee contributions is matched in cash by the employer. The amount expensed related to all savings plans totaled \$77 million in 1992 (\$88 million in 1991 and \$91 million in 1990).

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## Note 12

### Fair Value of Financial Instruments

FAS 107, "Disclosures about Fair Value of Financial Instruments," requires the determination of fair value for certain of the Corporation's assets, liabilities and contingent liabilities. When practicable, the following methods and assumptions were used to estimate the fair value of those financial instruments included in the following categories:

## Commitments and Contingent Liabilities

The Corporation and its consolidated subsidiaries occupy space and use certain equipment under lease arrangements. Rent expense in 1992, 1991 and 1990 under such arrangements totaled \$405 million, \$389 million and \$380 million, respectively. Rental commitments at December 31, 1992 under long-term noncancelable operating leases are as follows (See Note 5 for lease commitments associated with customer financing arrangements):

In Millions of Dollars	Land, Buildings and Office Space	Machinery, Tools and Equipment
1993	\$146	\$ 87
1994	115	51
1995	89	27
1996	68	11
1997	60	5
After 1997	183	4
	<u>\$661</u>	<u>\$185</u>

The Corporation extends performance and operating cost guarantees, which are beyond its normal warranty and service policies, for extended periods on some of its products, particularly commercial aircraft engines. Liability under such guarantees is contingent upon future product performance and durability. Management believes that it has adequately reserved for any resulting liabilities under these guarantees.

The Corporation is a potentially responsible party for environmental remediation and related expenditures at 79 federal Superfund sites, many of which relate to formerly-owned businesses. The Corporation believes that adequate reserves have been established for these sites and that it has adequately provided for its share of future remediation and related expenditures at other known sites for which it may have some remediation responsibility.

The nature of the above matters makes it difficult to estimate the exact timing and ultimate amount of future environmental expenditures. Also, the Corporation has instituted legal proceedings against its insurers seeking insurance coverage for remediation and related expenditures. These proceedings are expected to last several years.

The Corporation's Norden subsidiary is involved in a fixed-price development contract to design, develop and produce an advanced radar system for the Israeli government. The Corporation has recorded loss provisions to date based on existing information and estimates. As further progress on the contract is made, new information may arise that could increase the ultimate contract costs.

**Cash and short-term cash investments:** The carrying amount approximates fair value because of the short maturity of those instruments.

**Investments and receivables due after one year:** The fair values of some investments and receivables are estimated based on quoted market prices for those or similar instruments. For other investments and receivables for which there are no quoted market prices, an approximation of fair value is based upon projected cash flows discounted at an estimated current market rate of interest.

**Customer financing assets:** The fair values of customer financing assets are estimated based upon projected cash flows discounted at an estimated current market rate of interest.

**Long-term debt:** The fair value of the Corporation's long-term debt is estimated based on the quoted market prices for the same or similar issues or on the current rates offered to the Corporation for debt of the same remaining maturities.

**Interest rate swap agreements:** The fair value of interest rate swaps (used for hedging purposes) is the estimated amount that the Corporation would receive or pay to terminate the swap agreements at the reporting date, taking into account current interest rates and the current credit worthiness of the swap counterparties.

**Foreign currency contracts:** The fair value of foreign currency contracts (used for hedging purposes) is estimated by obtaining quotes from brokers.

**Financing commitments:** A reasonable estimate of fair value could not be made without incurring excessive costs. Additional information pertinent to the valuation of these commitments is provided below.

It is estimated that, except for the financing commitments described below, the carrying value of all of the Corporation's financial instruments approximate fair value at December 31, 1992.

It was not practicable, without incurring excessive cost, to estimate the fair value of the Corporation's financing commitments totaling \$2.0 billion at December 31, 1992. The fair value of such commitments would be based upon the amount a third party would charge for assuming the Corporation's obligation under the commitments. Additional information pertaining to these commitments is included in Note 5.

In June 1989, Sikorsky Aircraft submitted to the Government a voluntary disclosure report describing the conditions which gave rise to a \$75 million downward adjustment of progress payments in April 1988. Representatives of the Government have been investigating the matter since that time. In addition, the Corporation believes that an employee of the Company has filed a "qui tam" action under the Civil False Claims Act based on matters that he became aware of while working on the Corporation's investigation of this matter. Recently, the Civil Division of the Justice Department has stated that it would accept \$370 million in settlement of the Corporation's liability under the Civil False Claims Act, and a federal grand jury in Connecticut has subpoenaed Corporation employees to appear and testify. The Corporation has made an estimate of its liability for this matter based on available information, and has established a reserve based on its estimate. The Corporation is unable to predict the timing of any Government claim or otherwise to assess loss exposure in excess of amounts accrued. The Corporation is currently negotiating with the Department of Justice in an attempt to resolve this matter. If the Corporation is unable to negotiate a satisfactory settlement, it intends to litigate.

The Corporation believes that, in light of the current government contracting environment, it will be the subject of one or more governmental investigations in the foreseeable future. If the Corporation or one of its business units were charged with wrongdoing as a result of any of these investigations, the Corporation or one of its business units could be suspended from bidding on or receiving awards of new government contracts pending the completion of legal proceedings. If convicted or found liable, the Corporation could be fined and debarred from new government contracting for a period generally not to exceed three years. Any contracts found to be tainted by fraud could be voided by the Government.

The Corporation also has other commitments and contingent liabilities related to legal proceedings and matters arising out of the normal course of business.

Management believes that resolution of these matters will not have a material adverse effect on the financial position of the Corporation.

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## **Note 14**

### **Business Segment Financial Data**

Business segment information for the three years ended December 31, 1992 appears in the Consolidated Summary of Business Segment Financial Data on pages 43 through 45.



# Consolidated Summary of Business Segment Financial Data

United Technologies Corporation

## Industry Segments

In Millions of Dollars

Years Ended December 31,

	1992	1991	1990
<b>Revenues</b>			
Power	\$ 6,940	\$ 7,171	\$ 7,297
Flight Systems	3,983	3,973	4,034
Building Systems	8,835	8,140	7,988
Automotive	2,378	2,084	2,621
Other	60	50	32
Corporate items and eliminations	(164)	(156)	(184)
Consolidated revenue	<u>\$22,032</u>	<u>\$21,262</u>	<u>\$21,788</u>
<b>Operating Profits (Losses)</b>			
Power	\$ (305)	\$ (283)	\$ 1,010
Flight Systems	298	(213)	90
Building Systems	465	4	425
Automotive	111	2	150
Other	19	(13)	(13)
Eliminations	1	6	(9)
Operating profits (losses)	<u>589</u>	<u>(497)</u>	<u>1,653</u>
Financing revenues and other income, less other deductions	4	50	39
Interest expense	(282)	(339)	(362)
General corporate expenses	(111)	(105)	(39)
Consolidated income (loss) before income taxes	<u>\$ 200</u>	<u>\$ (891)</u>	<u>\$ 1,291</u>
<b>Identifiable Assets</b>			
Power	\$ 4,511	\$ 5,167	\$ 5,441
Flight Systems	2,111	2,246	2,456
Building Systems	4,437	4,446	4,142
Automotive	1,537	1,625	1,646
General corporate assets and other	3,332	2,501	2,233
Consolidated assets	<u>\$15,928</u>	<u>\$15,985</u>	<u>\$15,918</u>
<b>Capital Expenditures</b>			
Power	\$ 274	\$ 356	\$ 459
Flight Systems	154	186	173
Building Systems	314	331	316
Automotive	136	113	174
General corporate assets and other	42	62	78
Consolidated additions to fixed assets	<u>\$ 920</u>	<u>\$ 1,048</u>	<u>\$ 1,200</u>

See accompanying Notes to Consolidated Summary of Business Segment Financial Data



# Consolidated Summary of Business Segment Financial Data continued

United Technologies Corporation

## Geographic Areas

In Millions of Dollars

Years Ended December 31,

	1992	1991	1990
<b>Revenues</b>			
United States operations	\$14,403	\$14,201	\$15,020
International operations:			
Europe	4,572	4,121	3,986
Other	4,131	3,908	3,854
Corporate items and eliminations	(1,074)	(968)	(1,072)
Consolidated revenue	<u>\$22,032</u>	<u>\$21,262</u>	<u>\$21,788</u>
<b>Operating Profits (Losses)</b>			
United States operations	\$ (83)	\$ (1,034)	\$ 909
International operations:			
Europe	469	370	524
Other	272	184	349
Eliminations	(69)	(17)	(129)
Operating profits (losses)	<u>589</u>	<u>(497)</u>	<u>1,653</u>
Financing revenues and other income, less other deductions	4	50	39
Interest expense	(282)	(339)	(362)
General corporate expenses	(111)	(105)	(39)
Consolidated income (loss) before income taxes	<u>\$ 200</u>	<u>\$ (891)</u>	<u>\$ 1,291</u>
<b>Identifiable Assets</b>			
United States operations	\$ 8,200	\$ 8,959	\$ 9,598
International operations:			
Europe	2,247	2,392	2,256
Other	2,311	2,255	2,123
General corporate assets and other	3,170	2,379	1,941
Consolidated assets	<u>\$15,928</u>	<u>\$15,985</u>	<u>\$15,918</u>

See accompanying Notes to Consolidated Summary of Business Segment Financial Data

## Notes to Consolidated Summary of Business Segment Financial Data

**Principal Products:** The Corporation and its subsidiaries design, develop, manufacture and sell high-technology products, classified in four principal industry segments or lines of business.

Power products are principally aircraft engines and substantial spare parts sold to a diversified customer base including international and domestic commercial airlines and aircraft leasing companies, aircraft manufacturers, regional and commuter airlines, and U.S. and non-U.S. governments. Modified aircraft engines and related equipment for electrical power generation and other applications are also included.

Flight Systems products include helicopters and spare parts, propellers, rocket motors, and fuel control, environmental, radar, cockpit and integrated display and other airborne and space systems sold primarily to U.S. and non-U.S. governments, aerospace and defense prime contractors, and airframe and jet engine manufacturers.

Building Systems products include air conditioning equipment, elevators and escalators, substantial service, maintenance and spare parts sold to a diversified international customer base in commercial and residential real estate development.

Automotive products include electrical wiring systems, electromechanical and hydraulic devices, electric motors, car and truck interior trim components, steering wheels, instrument panels and other products for the automotive industry principally in the United States and Canada.

Activities classified as "Other" consist of a variety of business and developmental activities, including the design and manufacture of microelectronic circuits.

**Revenues:** Revenues by industry segment and geographic area includes intersegment sales and transfers between geographic areas. Generally, such sales and transfers are made at prices approximating those which the selling or transferring entity is able to obtain on sales of similar products to unaffiliated customers.

Revenues include sales under prime contracts and subcontracts to the U.S. Government, for the most part Power and Flight Systems products, as follows:

In Millions of Dollars	1992	1991	1990
Power	\$1,924	\$1,944	\$2,018
Flight Systems	2,588	2,479	2,623

Revenues from United States operations include export sales of \$3,451 million in 1992, \$3,587 million in 1991 and \$3,606 million in 1990. Export sales to Europe were \$441 million, \$561 million and \$457 million of the 1992, 1991 and 1990 amounts, respectively. Export sales include direct sales to commercial customers outside the United States and sales to the U.S. Government, commercial and affiliated customers outside the United States.

**Identifiable Assets:** Identifiable assets are those which are specifically identified with the industry segments and geographic areas in which operations are conducted. General corporate assets consist principally of cash and short-term cash investments, customer financing subsidiaries, and investments in other companies.

Depreciation charges are as follows:

In Millions of Dollars	1992	1991	1990
Power	\$309	\$309	\$276
Flight Systems	153	145	127
Building Systems	191	166	155
Automotive	89	79	86

**Eliminations:** Eliminations made in reconciling industry and geographic area data with the related consolidated amounts include intersegment sales and transfers between geographic areas, unrealized profits in inventory and similar items.

**Restructuring:** The Corporation recorded charges of \$85 million and \$1,275 million to operations for restructuring actions in 1992 and 1991, respectively. Such charges, by business segment and in total, were as follows:

In Millions of Dollars	1992	1991
Power	\$ 70	\$ 694
Flight Systems	15	136
Building Systems	—	323
Automotive	—	59
Other	—	16
	<u>85</u>	<u>1,228</u>
Financing revenues and other income,		
less other deductions	—	6
General corporate expenses	—	41
Total restructuring provision	<u>\$ 85</u>	<u>\$1,275</u>

The Summary of Business Segment Financial Data should be read in conjunction with the consolidated financial statements of the Corporation and notes thereto appearing elsewhere in this Annual Report.



## Selected Quarterly Financial Data

### United Technologies Corporation

In Millions of Dollars (except per share amounts)

**1992**

	Quarter Ended			
	March 31	June 30	September 30	December 31
<b>Sales</b>	<b>\$5,058</b>	<b>\$5,635</b>	<b>\$5,287</b>	<b>\$5,661</b>
<b>Financing revenues and other income, less other deductions</b>	<b>\$ 108</b>	<b>\$ 101</b>	<b>\$ 88</b>	<b>\$ 94</b>
<b>Gross profit</b>	<b>\$1,190</b>	<b>\$1,275</b>	<b>\$1,268</b>	<b>\$ 993</b>
<b>Income (loss) as originally reported</b>	<b>\$ 109</b>	<b>\$ 166</b>	<b>\$ 142</b>	<b>\$ (333)</b>
Effect of restatement for accounting principle changes	(15)	(18)	(16)	—
<b>Income (loss) before cumulative effect of accounting principle changes</b>	<b>\$ 94</b>	<b>\$ 148</b>	<b>\$ 126</b>	<b>\$ (333)</b>
<b>Primary earnings (loss) per share as originally reported</b>	<b>\$ .82</b>	<b>\$ 1.26</b>	<b>\$ .95</b>	<b>\$ (2.77)</b>
Effect of restatement for accounting principle changes	(.14)	(.15)	(.01)	—
<b>Primary earnings (loss) per share before cumulative effect of accounting principle changes</b>	<b>\$ .68</b>	<b>\$ 1.11</b>	<b>\$ .94</b>	<b>\$ (2.77)</b>
<b>Fully diluted earnings (loss) per share as originally reported</b>	<b>\$ .77</b>	<b>\$ 1.18</b>	<b>\$ .89</b>	<b>\$ (2.77)</b>
Antidilutive effect of the cumulative effect of accounting principle changes	.05	—	—	—
	.82	1.18	.89	(2.77)
Effect of restatement for accounting principle changes	(.14)	(.15)	(.02)	—
<b>Fully diluted earnings (loss) per share before cumulative effect of accounting principle changes</b>	<b>\$ .68</b>	<b>\$ 1.03</b>	<b>\$ .87</b>	<b>\$ (2.77)</b>

**1991**

<b>Sales</b>	<b>\$4,747</b>	<b>\$5,205</b>	<b>\$5,181</b>	<b>\$5,707</b>
<b>Financing revenues and other income, less other deductions</b>	<b>56</b>	<b>172</b>	<b>93</b>	<b>101</b>
<b>Gross profit</b>	<b>1,124</b>	<b>1,066</b>	<b>1,205</b>	<b>1,058</b>
<b>Net income (loss)</b>	<b>40</b>	<b>43</b>	<b>120</b>	<b>(1,224)</b>
<b>Earnings (loss) per share—primary</b>	<b>.25</b>	<b>.28</b>	<b>.90</b>	<b>(10.33)</b>
—fully diluted	.25	.28	.85	(10.33)

The cumulative effect of the accounting principle changes appears in the Corporation's Consolidated Statement of Operations on page 28 of this Annual Report.

In the fourth quarter of 1992, the Corporation recorded charges of \$447 million for credit and other exposures related to the commercial airline industry, \$169 million for various contract matters, and \$85 million for additional restructuring.

In the fourth quarter of 1991, the Corporation recorded charges related to restructuring actions and environmental remediation activities amounting to \$1,275 million and \$256 million, respectively.

## Board of Directors

### Howard H. Baker, Jr.

Partner,  
Baker, Worthington,  
Crossley, Stansberry & Woolf  
(Attorneys)

### Antonia Handler Chayes

Senior Consultant,  
Endispute Incorporated  
(Legal Consultation and  
Alternative Dispute  
Resolution)

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### George David

President and  
Chief Operating Officer

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SmithKline Beckman  
Corporation  
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### Charles W. Duncan, Jr.

(Private Investments)

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Food and Finance)

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Gerald D. Hines Interests  
Limited Partnership  
(Real Estate Development)

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Chairman of the Board and  
Chief Executive Officer,  
FMC Corporation  
(Machinery and Chemicals)

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Chief Executive Officer,  
Technology Strategies  
& Alliances  
(Technology Consultant)

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National Intergroup, Inc.  
(Metal Products)

### Jacqueline G. Wexler

Retired President, National  
Conference of Christians  
and Jews

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Antonia Handler Chayes  
George David  
Robert H. Malott  
Richard S. Smith

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Howard H. Baker, Jr.  
Antonia Handler Chayes  
Pehr G. Gyllenhammar  
Robert H. Malott  
Jacqueline G. Wexler

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Howard H. Baker, Jr.  
Charles W. Duncan, Jr.  
Jacqueline G. Wexler

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Robert F. Daniell  
Pehr G. Gyllenhammar  
Gerald D. Hines  
Robert H. Malott

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Robert F. Daniell  
Robert F. Dee  
Charles W. Duncan, Jr.

### Public Issues Review Committee

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Engines and Space Propulsion,  
Pratt & Whitney

**Selwyn D. Berson**

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Engine Business,  
Pratt & Whitney

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**William R. Brown**

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Carrier

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President, Sikorsky Aircraft

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Human Resources  
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**Franklyn A. Caine**

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**Leslie Carothers**

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Natural Resource Protection

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Research Center

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**Martin Creydt**

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United Technologies  
Automotive - Europe

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**George David**

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Chief Operating Officer

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Carrier Transicold Division

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Communications

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Government Contracts  
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Vice President,  
Communications

**Bruno Grob**

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Otis

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Components, UT Automotive

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Otis

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Chief Financial Officer

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**Vernon K. Stait**

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**Karl M. Thomas**

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Pratt & Whitney

**William H. Trachsel**

Vice President, Secretary and  
Deputy General Counsel

**Pierre Marie Valentin**

President, European  
Transcontinental Operations,  
Carrier

**Jean-Pierre van Rooy**

President,  
Otis Elevator Company

**Jon E. Wohler**

President, Norden Systems

**Irving B. Yoskowitz**

Executive Vice President  
and General Counsel



# Shareowner Information

## Corporate Office

United Technologies Building  
Hartford, Connecticut 06101  
Telephone (203) 728-7000

This annual report is sent to shareowners in advance of the proxy statement for the annual meeting to be held at 11:00 a.m., April 26, 1993, in Indianapolis, Indiana. The proxy statement will be sent to holders of Common Stock on or about March 17, 1993, at which time proxies for the meeting will be requested.

## Stock Listing

Common:  
New York, London, Paris, Frankfurt,  
Geneva, Lausanne, Basel, Zurich, Brussels and Amsterdam Stock Exchanges

## Ticker Symbol

Common: UTX

## Transfer Agent

For the Common Stock:  
First Chicago Trust Company  
of New York  
30 West Broadway  
New York, New York 10007

## Registrar

For the Common Stock:  
First Chicago Trust Company  
of New York  
30 West Broadway  
New York, New York 10007

## Dividends

Dividends are usually declared the first month of each calendar quarter and are usually paid on the 10th day of March, June, September and December.

The dividend disbursing agent for the Common Stock is:  
First Chicago Trust Company  
of New York  
30 West Broadway  
New York, New York 10007  
Dividend and Transfer inquiries:  
(212) 791-6422

## Consolidation of Accounts

Shareowners who receive multiple copies of the annual report and other financial documents because they have more than one UTC Common Stock account listing can help reduce the cost of printing and mailing these materials by having their accounts consolidated. Please advise:  
First Chicago Trust Company  
of New York  
30 West Broadway  
New York, New York 10007

## Additional Information

Shareowners may obtain a copy of the 1992 United Technologies 10-K report filed with the Securities and Exchange Commission by writing to:  
William H. Trachsel, Secretary  
United Technologies Corporation  
United Technologies Building  
Hartford, Connecticut 06101

For additional information about United Technologies, please contact the Investor Relations Department at the above Corporate Office address.



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